

TROJAN LAW OFFICES
BEVERLY HILLS

R. Joseph Trojan CA Bar No. 137,067
Trojan@trojanlawoffices.com
TROJAN LAW OFFICES
9250 Wilshire Blvd., Suite 325
Beverly Hills, CA 90212
Telephone: 310-777-8399
Facsimile: 310-777-8348

Attorneys for Defendant,
CROWN RING, INC.

**IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF CALIFORNIA**

TRENT WEST,

Plaintiff,

v.

CASE NO. C 5:07-cv-01812-JF (HRL)

**DEFENDANT CROWN RING, INC.'S
[PROPOSED] SECOND AMENDED
PRELIMINARY INVALIDITY
CONTENTIONS**

JEWELRY INNOVATIONS, INC.,
TOSYALI INTERNATIONAL, INC.,
(d.b.a. BENCHMARK), DIAMOND
NORTHSTAR, INC., (d.b.a.
TUNGSTEN MAGNUM), A JAMAIS
DESIGNS, INC. (d.b.a. INFINITY
RINGS), and CROWN RING, INC.,

Defendants,

and Related Counterclaims

In accordance with the Local Patent Rules 3-3 and 3-7, Defendant Crown Ring, Inc. ("Crown Ring") submits the following Second Amended Preliminary Invalidity Contentions with respect to the U.S. Patent Nos. 6,928,734 ("the '734 patent"), 6,990,736 ("the '736 patent"), 7,032,314 ("the '314 patent") and 7,076,972 ("the '972 patent") (collectively, "Patents in suit").

1 Crown Ring incorporates, in full, all prior art references cited in the Patents in suit and
2 their prosecution histories.

3 The disclosures and contentions herein are based on the Court's claim construction
4 order dated April 10, 2008 and Plaintiff's First Amended Infringement Contentions Against
5 Crown Ring filed on October 28, 2008. Plaintiff has identified, in his First Amended
6 Infringement Contentions, claims 16, 18, 29, 33, 34 and 35 of the '734 patent, claims 1, 10, 14
7 and 19 of the '314 patent, claims 1, 10 and 24 of the '736 patent, and claims 1, 5 and 6 of the
8 '972 patent as being infringed. Further, Plaintiff's counsel has confirmed in writing that the
9 above-identified claims are the only claims on which Plaintiff bases his patent infringement
10 allegations in this case. Accordingly, these Second Amended Preliminary Invalidity
11 Contentions discusses the identified claims only.

12 Crown Ring bases the Second Amended Preliminary Invalidity Contentions on
13 information reasonably available to it at this time, and reserves the right to further amend,
14 modify, or supplement the contentions and to identify additional prior art references or
15 additional bases for invalidity of the asserted claims should new information be brought to its
16 attention.

17 18 **I. INTRODUCTION**

19 The Patents in suit generally relate to the methods of making tungsten carbide jewelry by
20 forming a basic ring by sintering tungsten carbide and then adding various decorative features to
21 the basic ring. It is a well-known fact that tungsten carbide technology was developed on behalf
22 of the General Electric Company in the 1920s in connection with the incandescent light bulb
23 filaments. A U.S. patent by a German inventor Karl Schroeter assigned to GE and dating back to
24 1925, teaches consolidating tungsten and tungsten alloy powder into hard bodies and
25 subsequently sintering the bodies. An article by Raghunathan et al. summarizes the state of the
26 art on tungsten carbide technologies in the 1990s, more than a year before the alleged Plaintiff's
27 invention. The Patents in suit teach application of the known tungsten carbide technology to

form a jewelry ring and further add commonly known decorative features to the ring.

II. PATENT L.R. 3-3(a)

Crown Ring identifies the following items of prior art that either anticipate or render obvious the asserted claims of the Patents in suit.

1. Article by Raghunathan et al. "Tungsten carbide technologies" (1996), Advanced Materials & Processes, April 96, pp. 21-23 (Exh. 2 to Declaration of R. Joseph Trojan ("Trojan Decl.") previously submitted with Crown Ring's Preliminary Invalidity Contentions) ("Raghunathan et al.")
2. U.S. Patent No. 1,551,333 issued August 25, 1925 (Exh. 1 to Trojan Decl.) ("333 patent")
3. U.S. Patent No. 2,747,259 issued May 29, 1956 (Exh. 6 to Trojan Decl.) ("259 patent")
4. U.S. Patent No. 1,594,885 issued August 8, 1926 (Exh. 9 to Trojan Decl.) ("885 patent")
5. U.S. Patent No. D53,040 issued March 4, 1919 (Exh. 10 to Trojan Decl.) ("040 patent")
6. U.S. Patent No. D113,692 issued March 7, 1939 (Exh. 11 to Trojan Decl.) ("692 patent")
7. U.S. Patent No. D137,743 issued April 25, 1944 (Exh. 12 to Trojan Decl.) ("743 patent")
8. U.S. Patent No. 1,254,791 issued January 29, 1918 (Exh. 14 to Trojan Decl.) ("791 patent")
9. U.S. Patent No. 3,669,695 issued June 13, 1972 to Iler, et al. ("Iler")
10. U.S. Patent No. 6,020,826 issued February 1, 2000 to Rein ("Rein"): it has priority date of November 11, 1994 based on DE 44 43 253 (Germany)
11. U.S. Patent No. 3,242,664 issued March 29, 1966 to Lederrey ("Lederrey")

12. U.S. Patent No. 2,050,253 issued August 11, 1936 to Bager (“Bager”)
13. JP 64-008245 (Japan) issued January 12, 1989 to Maruyama, et al. (“Maruyama”)
14. U.S. Patent No. 5,431,028 issued July 11, 1995 to Lampert, et al. (“Lampert”)
15. JP 61-177351 (Japan) issued August 9, 1986 to Nippon Tungsten KK[NIUB], et al.
 (“Nippon Tungsten”)
16. U.S. Patent No. 3,719,479 issued March 6, 1973 to Flanagan (“Flanagan”)
17. U.S. Patent No. 1,863,618 issued June 21, 1932 to Brogan (“Brogan”)
18. U.S. Patent No. 3,837,163 issued September 24, 1974 to Fujimori (“Fujimori”)
19. AU 208883 (Australia) issued August 9, 1956 to Hawke (Aust.) Limited. (“Hawke”)
20. U.S. Patent No. 5,003,678 issued April 2, 1991 to Oganessian (“Oganessian”)
21. Lawrence Stanley’s tungsten carbide finger ring modified from a tungsten carbide
bushing or guide ring (“Stanley” or “Stanley ring”): The Stanley ring is a tungsten
carbide finger ring which was modified from a tungsten carbide bushing or guide ring
by Lawrence Stanley in or around 1991 at his place of employment, Yilik Precision
Industries, Inc. (“Yilik”). Stanley wore the finger ring for a period of approximately
six months thereafter, during which he showed it to the public (*e.g.*, at diner club).
See the transcript of the deposition of Lawrence Stanley conducted on August 7, 2008
and the Exhibits attached thereto.
22. General Carbide’s and/or Edwin A. McKinnon’s tungsten carbide blanks and method
of making the same (“McKinnon”): The compositions/formula of tungsten carbide
material used for West’s tungsten carbide ring was known in the prior art and had
been developed and chosen by McKinnon. It was General Carbide that manufactured
the annular blanks used for West’ tungsten carbide ring according to its own
compositions/formula and method known in the prior art. Further, prior to Trent
West, General Carbide had manufactured lots of tungsten carbide rings in various
dimensions, using the same method as used in making the annular blanks for West’s
tungsten carbide rings. *See* the transcript of the deposition of Edwin A. McKinnon

conducted on September 3, 2008 and the Exhibits attached thereto.

23. Plaintiff Trent West's own admissions ("West"): West has admitted that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring as well as the method of making tungsten carbide blanks were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape including a shape of a pipe. Further, West has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. See the transcript of the deposition of Trent West conducted on June 3, 2008 and the Exhibits attached thereto.

III. PATENT L.R. 3-3(b)

The asserted claims of the Patents in suit are anticipated or rendered obvious in light of the prior art references as shown below. Crown Ring's contentions are in no way an admission or suggestion that a specific reference does not independently anticipate the asserted claims. Also, provided below are a few exemplary, but not exhaustive, motivations to combine the prior art references.

A. Invalidity under 35 U.S.C. § 102(f)

All of the asserted claims of the Patents in suit are invalid because the subject matter of the claims was not invented by Trent West. Trent West has admitted that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring (the subject matter of the asserted claims), the method of making tungsten carbide blanks, and sintering, grinding, shaping, and polishing were well known in the prior art and were not invented by him. McKinnon testified that the compositions/formula of tungsten carbide material

1 used for West's tungsten carbide ring was known in the prior art and had been developed and
 2 chosen by McKinnon. Accordingly, it is McKinnon, not West, who developed the
 3 compositions/formula of tungsten carbide. For West's tungsten carbide ring, McKinnon simply
 4 chose the compositions/formula of tungsten carbide material among a number of
 5 compositions/formula that McKinnon or General Carbide had developed. Further, West has
 6 acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art.
 7 Moreover, a grind shop, not West himself, was the one who turned the tungsten carbide blanks
 8 into rings by grinding and shaping. For example, a grind shop named Hagel & Zeller made
 9 West's first tungsten carbide ring. *See* the Deposition of Trent West, p. 58, lines 18-24. The
 10 remaining features, such as designs and inlays, also were not invented by West as they were
 11 commonly known in the field of jewelry articles, as shown in the prior art references discussed in
 12 the claim charts below.

13 **B. Unenforceability Due to Fraud and Inequitable Conduct**

14 As stated above, Trent West has admitted that the compositions/formula of tungsten
 15 carbide material used for West's tungsten carbide ring (the subject matter of the asserted claims),
 16 the method of making tungsten carbide blanks, and sintering, grinding, shaping, and polishing
 17 were well known in the prior art and were not invented by him. In particular, McKinnon has
 18 testified that the compositions/formula of tungsten carbide material were developed and chosen
 19 by McKinnon himself. The specifications of the Patents in suit describe that the very hard,
 20 durable and scratch-resistant properties inherent in the compositions/formula of the tungsten
 21 carbide material are the key feature of the subject matter claimed in the Patents in suit. West,
 22 however, intentionally concealed the fact that McKinnon is the inventor for the
 23 compositions/formula, thereby committing a fraud to the U.S. Patent Office. As a result of
 24 West's fraud and inequitable conduct, all of the Patents in suit are unenforceable.

25 **C. Anticipating Prior Art**

26 Iler anticipates all of the asserted claims of the '734 patent and all of the asserted claims
 27 of the '314 patent. Stanley ring anticipates at least claims 16, 18, 33, and 35 of the '734 patent

and claim 1 of the '314 patent.

D. Obviousness

a. Identification of Combinations of Prior Art

The following list identifies combinations of prior art that Crown Ring presently intends to rely on for its contentions that the asserted claims of the Patents in suit are obvious.

Claims 16, 18, and 33 of the '734 patent

- (1) The '333 patent, in combination with Raghunathan et al.
- (2) Raghunathan et al. by itself, or in combination with the knowledge in the art.
- (3) Iler by itself, or in combination with the knowledge in the art.
- (4) Iler, in combination with Stanley ring.
- (5) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten, Maruyama, Lederrey, and Rein, or any combination thereof.
- (6) Rein, in combination with the knowledge in the art.
- (7) Rein, in combination of Raghunathan et al.
- (8) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof.
- (9) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (10) Bager, in combination with Iler.
- (11) Bager, in combination of Raghunathan et al.
- (12) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof.
- (13) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

Claim 29 of the '734 patent

- 1 (1) The '333 patent, in combination with Raghunathan et al.
- 2 (2) Raghunathan et al. by itself, or in combination with the knowledge in the art.
- 3 (3) Iler by itself, or in combination with the knowledge in the art.
- 4 (4) Iler, in combination with Stanley ring.
- 5 (5) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten,
- 6 Maruyama, Lederrey, and Rein, or any combination thereof.
- 7 (6) Rein, in combination with the knowledge in the art.
- 8 (7) Rein, in combination of Raghunathan et al.
- 9 (8) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any
- 10 combination thereof.
- 11 (9) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 12 any combination thereof, and further in view of Flanagan.
- 13 (10) Bager, in combination with Iler.
- 14 (11) Bager, in combination of Raghunathan et al.
- 15 (12) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
- 16 or any combination thereof.
- 17 (13) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
- 18 or any combination thereof, and further in view of Flanagan.
- 19 (14) The '333 patent, in combination with Raghunathan et al., and further in view of
- 20 any of Oganesyan, Hawke, Brogan, Bager, Lederrey, Rein, Iler, or any combination
- 21 thereof.
- 22 (15) Raghunathan et al., in view of any of Oganesyan, Hawke, Brogan, and Lederrey,
- 23 or any combination thereof.
- 24 (16) Iler, in view of any of Oganesyan, Hawke, and Brogan, or any combination
- 25 thereof.
- 26 (17) Iler, in combination with Stanley ring, and further in view of any of Oganesyan,
- 27 Hawke, Brogan, and Bager, or any combination thereof.

- (18) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten, Maruyama, Lederrey, and Rein, or any combination thereof, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (19) Rein, in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (20) Rein, in combination of Raghunathan et al., and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (21) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (22) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (23) Stanley ring, in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

Claim 34 of the '734 patent

- (1) The '333 patent, in combination with Raghunathan et al.
- (2) Raghunathan et al. by itself, or in combination with the knowledge in the art.
- (3) Iler by itself, or in combination with the knowledge in the art.
- (4) Iler, in combination with Stanley ring.
- (5) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten, Maruyama, Lederrey, and Rein, or any combination thereof.
- (6) Rein, in combination with the knowledge in the art.
- (7) Rein, in combination of Raghunathan et al.
- (8) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof.

- 1 (9) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 2 any combination thereof, and further in view of Flanagan.
- 3 (10) Bager, in combination with Iler.
- 4 (11) Bager, in combination of Raghunathan et al.
- 5 (12) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
- 6 or any combination thereof.
- 7 (13) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
- 8 or any combination thereof, and further in view of Flanagan.
- 9 (14) The '333 patent, in combination with Raghunathan et al., and further in view of
- 10 any of Lampert and Iler, or combination thereof.
- 11 (15) Raghunathan et al., in combination with Lampert.
- 12 (16) Iler, in combination with Lampert.
- 13 (17) Iler, in combination with Stanley ring, and further in view of Lampert.
- 14 (18) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten,
- 15 Maruyama, Lederrey, and Rein, or any combination thereof, and further in view of
- 16 Lampert.
- 17 (19) Rein, in combination with Lampert.
- 18 (20) Rein, in combination of Raghunathan et al., and further in view of Lampert.
- 19 (21) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 20 any combination thereof, and further in view of Lampert.
- 21 (22) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 22 any combination thereof, and further in view of Flanagan, and further in view of
- 23 Lampert.
- 24 (23) Bager, in combination with Iler, and further in view of Lampert.
- 25 (24) Bager, in combination of Raghunathan et al., and further in view of Lampert.
- 26 (25) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
- 27 or any combination thereof, and further in view of Lampert.

(26) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

Claim 35 of the '734 patent

(1) The '333 patent, in combination with Raghunathan et al.

(2) Raghunathan et al. by itself, or in combination with the knowledge in the art.

(3) Iler by itself, or in combination with the knowledge in the art.

(4) Iler, in combination with Stanley ring.

(5) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten, Maruyama, Lederrey, and Rein, or any combination thereof.

(6) Rein, in combination with the knowledge in the art.

(7) Rein, in combination of Raghunathan et al.

(8) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof.

(9) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(10) Bager, in combination with Iler.

(11) Bager, in combination of Raghunathan et al.

(12) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof.

(13) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(14) The '333 patent, in combination with Raghunathan et al., and further in view of any of Oganesyan, Hawke, Brogan, Bager, Lederrey, Rein, Iler, and Lampert, or any combination thereof.

(15) Raghunathan et al., in view of any of Oganesyan, Hawke, Brogan, Lederrey, and

Lampert, or any combination thereof.

(16) Iler, in view of any of Oganesyan, Hawke, Brogan, and Lampert, or any combination thereof.

(17) Iler, in combination with Stanley ring, and further in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(18) Iler, in view of any of Raghunathan et al., Fujimora, Flanagan, Nippon Tungsten, Maruyama, Lederrey, and Rein, or any combination thereof, and further in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(19) Rein, in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(20) Rein, in combination of Raghunathan et al., and further in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(21) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(22) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

(23) Stanley ring, in view of any of Oganesyan, Hawke, Brogan, Bager, and Lampert, or any combination thereof.

Claims 1, 10, and 24 of the '736 patent

(1) Raghunathan et al., in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.

(2) Raghunathan et al., in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan.

- (3) Raghunathan et al., in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan, and further in view of Lederrey.
- (4) Raghunathan et al., in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan, and further in view of Lederrey, and further in view of any of Oganesyan and Brogan, or combination thereof.
- (5) Iler, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.
- (6) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.
- (7) Iler, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of Lederrey.
- (8) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of Lederrey.
- (9) Iler, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof.
- (10) Iler, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan.
- (11) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof.
- (12) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of

Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan.

(13) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan, and further in view of Lederrey.

(14) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of Lederrey, and further in view of any of Oganesyan and Brogan, or combination thereof.

(15) Iler, in view of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan, and further in view of Lederrey, and further in view of any of Oganesyan and Brogan, or combination thereof.

(16) Rein, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.

(17) Rein, in combination of Raghunathan et al., and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.

(18) Rein, in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.

(19) Rein, in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any combination thereof, and further in view of Flanagan, and further in view of any of Hawke, Bager, and the '259 patent, or any combination thereof.

(20) Rein, in view of any of Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of Lederrey.

(21) Rein, in combination of Raghunathan et al., and further in view of any of Hawke,

1 Bager, and the '259 patent, or any combination thereof, and further in view of
2 Lederrey.

3 (22) Rein, in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any
4 combination thereof, and further in view of any of Hawke, Bager, and the '259 patent,
5 or any combination thereof, and further in view of Lederrey.

6 (23) Rein, in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any
7 combination thereof, and further in view of Flanagan, and further in view of any of
8 Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of
9 Lederrey.

10 (24) Rein, in view of any of Fujimora, Nippon Tungsten, and Maruyama, or any
11 combination thereof, and further in view of Flanagan, and further in view of any of
12 Hawke, Bager, and the '259 patent, or any combination thereof, and further in view of
13 Lederrey, and further in view of any of Oganesyan and Brogan, or combination
14 thereof.

15 (25) Stanley ring, in view of any of Hawke, Bager, and the '259 patent, or any
16 combination thereof.

17 (26) Stanley ring, in view of any of Hawke, Bager, and the '259 patent, or any
18 combination thereof, and further in view of any of Oganesyan and Brogan, or
19 combination thereof.

20 (27) Stanley ring, in view of any of Hawke, Bager, and the '259 patent, or any
21 combination thereof, and further in view of any of Oganesyan and Brogan, or
22 combination thereof, and further in view of Lederrey.

23 (28) Stanley ring, in view of any of Hawke, Bager, and the '259 patent, or any
24 combination thereof, and further in view of any of Oganesyan and Brogan, or
25 combination thereof, and further in view of Lederrey, and further in view of
26 Flanagan.

Claims 1 and 19 of the '314 patent

- (1) Raghunathan et al., in view of any of the '885, '040, '692, and '743 patents, or any combination thereof.
- (2) Iler.
- (3) Iler, in combination with Raghunathan et al.
- (4) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (5) Iler, in combination with Lampert.
- (6) Iler, in combination with Raghunathan et al., and further in view of Lampert.
- (7) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.
- (8) Rein
- (9) Rein, in combination with Raghunathan et al.
- (10) Rein, in combination with Iler.
- (11) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (12) Rein, in combination with Lampert.
- (13) Rein, in combination with Raghunathan et al., and further in view of Lampert.
- (14) Rein, in combination with Iler, and further in view of Lampert.
- (15) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.
- (16) Bager, in combination with Raghunathan et al.
- (17) Bager, in combination with Iler.
- (18) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (19) Bager, in combination with Raghunathan et al., and further in view of Lampert.

(20) Bager, in combination with Iler., and further in view of Lampert.

(21) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(22) Stanley ring.

(23) Stanley ring, in combination with Lampert.

(24) Stanley ring, in combination with Lederrey, and further in view of Flanagan.

Claims 10 and 14 of the '314 patent

(1) Raghunathan et al., in view of any of the '885, '040, '692, and '743 patents, or any combination thereof.

(2) Iler.

(3) Iler, in combination with Raghunathan et al.

(4) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(5) Iler, in combination with Lampert.

(6) Iler, in combination with Raghunathan et al., and further in view of Lampert.

(7) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(8) Rein

(9) Rein, in combination with Raghunathan et al.

(10) Rein, in combination with Iler.

(11) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(12) Rein, in combination with Lampert.

(13) Rein, in combination with Raghunathan et al., and further in view of Lampert.

(14) Rein, in combination with Iler., and further in view of Lampert.

- (15) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.
- (16) Bager, in combination with Raghunathan et al.
- (17) Bager, in combination with Iler.
- (18) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (19) Bager, in combination with Raghunathan et al., and further in view of Lampert.
- (20) Bager, in combination with Iler., and further in view of Lampert.
- (21) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.
- (22) Stanley ring.
- (23) Stanley ring, in combination with Lampert.
- (24) Stanley ring, in combination with Lederrey, and further in view of Flanagan.
- (25) Raghunathan et al., in view of any of the '885, '040, '692, and '743 patents, or any combination thereof, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (26) Iler, in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (27) Iler, in combination with Raghunathan et al., and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (28) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (29) Iler, in combination with Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

- (30) Iler, in combination with Raghunathan et al., and further in view of Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (31) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof
- (32) Rein, in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (33) Rein, in combination with Raghunathan et al., and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (34) Rein, in combination with Iler, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (35) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (36) Rein, in combination with Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (37) Rein, in combination with Raghunathan et al., and further in view of Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (38) Rein, in combination with Iler, and further in view of Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.
- (39) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

(40) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(41) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(42) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, and Brogan, or any combination thereof.

(43) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Oganesyan, Hawke, and Brogan, or any combination thereof.

(44) Stanley ring, in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

(45) Stanley ring, in combination with Lampert, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

(46) Stanley ring, in combination with Lederrey, and further in view of Flanagan, and further in view of any of Oganesyan, Hawke, Brogan, and Bager, or any combination thereof.

Claims 1, 5, and 6 of the '972 patent

(1) Raghunathan et al., in view of the '259 patent, and further in view of the '791 patent, and further in view of any of the '040, '692, and '743 patents, or any combination thereof.

(2) Iler.

(3) Iler, in combination with Raghunathan et al.

(4) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any

combination thereof, and further in view of Flanagan.

(5) Iler, in combination with Lampert.

(6) Iler, in combination with Raghunathan et al., and further in view of Lampert.

(7) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(8) Rein

(9) Rein, in combination with Raghunathan et al.

(10) Rein, in combination with Iler.

(11) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(12) Rein, in combination with Lampert.

(13) Rein, in combination with Raghunathan et al., and further in view of Lampert.

(14) Rein, in combination with Iler., and further in view of Lampert.

(15) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(16) Bager, in combination with Raghunathan et al.

(17) Bager, in combination with Iler.

(18) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.

(19) Bager, in combination with Raghunathan et al., and further in view of Lampert.

(20) Bager, in combination with Iler., and further in view of Lampert.

(21) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.

(22) Stanley ring.

(23) Stanley ring, in combination with Lampert.

- 1 (24) Stanley ring, in combination with Lederrey, and further in view of Flanagan.
- 2 (25) Raghunathan et al., in view of the '259 patent, and further in view of the '791
- 3 patent, and further in view of any of the '040, '692, and '743 patents, or any
- 4 combination thereof, and further in view of any of Hawke, Brogan, and Bager, or any
- 5 combination thereof.
- 6 (26) Iler, in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- 7 (27) Iler, in combination with Raghunathan et al., and further in view of any of Hawke,
- 8 Brogan, and Bager, or any combination thereof.
- 9 (28) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 10 any combination thereof, and further in view of Flanagan, and further in view of any
- 11 of Hawke, Brogan, and Bager, or any combination thereof.
- 12 (29) Iler, in combination with Lampert, and further in view of any of Hawke, Brogan,
- 13 and Bager, or any combination thereof.
- 14 (30) Iler, in combination with Raghunathan et al., and further in view of Lampert, and
- 15 further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- 16 (31) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 17 any combination thereof, and further in view of Flanagan, and further in view of
- 18 Lampert, and further in view of any of Hawke, Brogan, and Bager, or any
- 19 combination thereof
- 20 (32) Rein, in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- 21 (33) Rein, in combination with Raghunathan et al., and further in view of any of
- 22 Hawke, Brogan, and Bager, or any combination thereof.
- 23 (34) Rein, in combination with Iler, and further in view of any of Hawke, Brogan, and
- 24 Bager, or any combination thereof.
- 25 (35) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
- 26 any combination thereof, and further in view of Flanagan, and further in view of any
- 27 of Hawke, Brogan, and Bager, or any combination thereof.

- (36) Rein, in combination with Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (37) Rein, in combination with Raghunathan et al., and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (38) Rein, in combination with Iler, and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (39) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (40) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan.
- (41) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert.
- (42) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Hawke and Brogan, or combination thereof.
- (43) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Hawke and Brogan, or combination thereof.
- (44) Stanley ring, in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (45) Stanley ring, in combination with Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.
- (46) Stanley ring, in combination with Lederrey, and further in view of Flanagan, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof.

(47) Iler, in view of the '259 patent.

(48) Iler, in combination with Raghunathan et al., and further in view of the '259 patent.

(49) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of the '259 patent.

(50) Iler, in combination with Lampert, and further in view of the '259 patent.

(51) Iler, in combination with Raghunathan et al., and further in view of Lampert, and further in view of the '259 patent.

(52) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of the '259 patent.

(53) Rein, in view of the '259 patent.

(54) Rein, in combination with Raghunathan et al., and further in view of the '259 patent.

(55) Rein, in combination with Iler, and further in view of the '259 patent.

(56) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of the '259 patent.

(57) Rein, in combination with Lampert, and further in view of the '259 patent.

(58) Rein, in combination with Raghunathan et al., and further in view of Lampert, and further in view of the '259 patent.

(59) Rein, in combination with Iler, and further in view of Lampert, and further in view of the '259 patent.

(60) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of the '259 patent.

- 1 (61) Bager, in combination with Raghunathan et al., and further in view of the '259
2 patent.
- 3 (62) Bager, in combination with Iler, and further in view of the '259 patent.
- 4 (63) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
5 or any combination thereof, and further in view of Flanagan, and further in view of
6 the '259 patent.
- 7 (64) Bager, in combination with Raghunathan et al., and further in view of Lampert,
8 and further in view of the '259 patent.
- 9 (65) Bager, in combination with Iler., and further in view of Lampert, and further in
10 view of the '259 patent.
- 11 (66) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey,
12 or any combination thereof, and further in view of Flanagan, and further in view of
13 Lampert, and further in view of the '259 patent.
- 14 (67) Stanley ring, in view of the '259 patent.
- 15 (68) Stanley ring, in combination with Lampert, and further in view of the '259 patent.
- 16 (69) Stanley ring, in combination with Lederrey, and further in view of Flanagan, and
17 further in view of the '259 patent.
- 18 (70) Iler, in view of any of Hawke, Brogan, and Bager, or any combination thereof,
19 and further in view of the '259 patent.
- 20 (71) Iler, in combination with Raghunathan et al., and further in view of any of Hawke,
21 Brogan, and Bager, or any combination thereof, and further in view of the '259
22 patent.
- 23 (72) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or
24 any combination thereof, and further in view of Flanagan, and further in view of any
25 of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the
26 '259 patent.
- 27 (73) Iler, in combination with Lampert, and further in view of any of Hawke, Brogan,

and Bager, or any combination thereof, and further in view of the '259 patent.

(74) Iler, in combination with Raghunathan et al., and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(75) Iler, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(76) Rein, in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(77) Rein, in combination with Raghunathan et al., and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(78) Rein, in combination with Iler, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(79) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(80) Rein, in combination with Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(81) Rein, in combination with Raghunathan et al., and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

(82) Rein, in combination with Iler, and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

- (83) Rein, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.
- (84) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of the '259 patent.
- (85) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of the '259 patent.
- (86) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of any of Hawke and Brogan, or combination thereof, and further in view of the '259 patent.
- (87) Bager, in view of any of Fujimora, Nippon Tungsten, Maruyama, and Lederrey, or any combination thereof, and further in view of Flanagan, and further in view of Lampert, and further in view of any of Hawke and Brogan, or combination thereof, and further in view of the '259 patent.
- (88) Stanley ring, in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.
- (89) Stanley ring, in combination with Lampert, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.
- (90) Stanley ring, in combination with Lederrey, and further in view of Flanagan, and further in view of any of Hawke, Brogan, and Bager, or any combination thereof, and further in view of the '259 patent.

b. Motivation for Combining Identified Combinations of Prior Art

A person of ordinary skill in the art would have been motivated to combine each of the above-referenced combinations of prior art. As admitted and testified by West and McKinnon, the compositions/formula of tungsten carbide material used for West's tungsten carbide ring (which is the subject matter of the asserted claims of the Patents in suit), the method of making tungsten carbide blanks, and sintering, grinding, shaping, and polishing the same were well known in the prior art. Also, very hard and scratch-resistant characteristics of tungsten carbide material were well known in the prior art. A person of ordinary skill in the art would have been motivated to combine the teachings of the prior art references for jewelry articles (*e.g.*, Rein, Iler, Bager) with the well-known tungsten carbide technology, in order to make hard and scratch-resistant jewelry articles such as a finger ring. Further, the selection of a known material based upon its suitability for the intended use is a design consideration within the skill of the art. In re Leshin, 227 F.2d 197, 125 U.S.P.Q. 416 (CCPA 1960).

Moreover, it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. In re Aller, 220 F.2d 454, 456, 105 U.S.P.Q. 233, 235 (CCPA 1955); In re Reese, 290 F.2d 839, 129 U.S.P.Q. 402 (CCPA 1961) (the optimization of proportions in a prior art device is a design consideration within the skill of the art). Accordingly, if Plaintiff argues that certain prior art reference identified above does not expressly disclose the ranges of tungsten carbide compositions required in the asserted claims, such reference still renders the claims obvious pursuant to the precedent.

In addition, a person of ordinary skill in the art would have been motivated to apply the teachings of the prior art references for watch cases and bracelets (*e.g.*, Nippon Tungsten, Lederrey, Maruyama) in making a finger ring because watch cases and bracelets are considered as jewelry articles. The subject matter of the asserted claims of the Patents in suit is not more complicated than the watch cases and bracelets disclosed in the prior art references, and it would have been obvious for a person of ordinary skill in the art to try the combination.

Also, it would have been an obvious matter of design choice to a person of ordinary skill in the art, at the time of the invention, to provide a finger ring with design details, such as one or more facets, groove(s), slot(s), gems or metal inlays, etc., in order to provide the desired aesthetic effect of the ring. It has been held that matters relating to ornamentation only which have no mechanical function cannot be relied upon to patentably distinguish the claimed invention from the prior art. In re Seid, 161 F.2d 229, 73 U.S.P.Q. 431 (CCPA 1947). Further, a change in the shape of a prior art device is an obvious design consideration within the skill of the art. In re Dailey, 357 F.2d 669, 149 U.S.P.Q. 47 (CCPA 1966).

For example, as previously stated in Crown Ring's Preliminary Invalidity Contentions, the '333 patent teaches the basic technique of metallurgy in application to tungsten and its alloys. Raghunathan et al. describes making various objects, including ring-shaped objects, out of tungsten carbide powder by the use of powder consolidation, applying pressure, sintering and post sinter forming. The steps in the '333 patent and Raghunathan are identical to the steps described in the '734 patent. The '333 patent and Raghunathan do not teach using the ring-shaped objects in jewelry. However, the Supreme Court has stated, "When a work is available in one field of endeavor, design incentives and other market forces can prompt variations of it, either in the same field or a different one." KSR Intern. Co. v. Teleflex Inc. 127 S. Ct. 1727, 1740 (2007). It would have been obvious to a person of ordinary skill to use such ring-shaped objects in the field of jewelry making.

In another example, Raghunathan et al. does not teach any decorations for the ring-shaped tungsten carbide objects. However, the '259 patent teaches forming inlays of contrasting precious metals in a ring. The inlays are placed into depressions or "blind holes" in the ring, inserted and secured by brazing and soldering. These steps are identical to the steps taught by the '736 patents, except that the inlays are not in a form of a band that goes around the entire ring. Instead, the '259 patent teaches a series of shapes arranged in a row around the ring. It would have been obvious to one of skill in the art to convert a series of shapes arranged around the ring into a continuous band going around the ring as a variation in the design. The Supreme

1 Court has stated, “If a person of ordinary skill can implement a predictable variation, [35 U.S.C.]
2 §103 likely bars its patentability.” KSR *supra* at 1740. A person of ordinary skill, able to make
3 tungsten carbide rings as described by Raghunathan et al., would be able to decorate the rings
4 using the teachings of the ‘259 patent.

5 In still another example, the ‘885, the ‘040, the ‘692 and the ‘743 patents teach forming
6 facets in a ring. The facets are polished to a variety of predetermined shapes. The Supreme
7 Court has stated, “If a technique has been used to improve one device, and a person of ordinary
8 skill in the art would recognize that it would improve similar devices in the same way, using the
9 technique is obvious unless its actual application is beyond his or her skill.” KSR *supra* at 1740.
10 A person of ordinary skill, able to make tungsten carbide rings as described by Raghunathan et
11 al., would recognize that facets on rings described in the ‘885, the ‘040, the ‘692 and the ‘743
12 patents would also improve the appearance of tungsten carbide rings. Forming facets by
13 grinding is within the purview of a person of ordinary skill.

14 In still another example, Ragunathan et al. does not teach inlays, facets or polishing the
15 facets into a mirror finish. However, each of these decorative techniques for jewelry rings has
16 been described in the prior art. Specifically, the ‘259 patent teaches inlays, the ‘040, ‘692 and
17 ‘743 patents each teach rings with facets, while the ‘791 patent teaches polishing jewelry to a
18 mirror finish.

19 The Supreme Court stated, “If a technique has been used to improve one device, and a
20 person of ordinary skill in the art would recognize that it would improve similar devices in the
21 same way, using the technique is obvious unless its actual application is beyond his or her skill.”
22 KSR *supra* at 1740. A person of ordinary skill, able to make tungsten carbide rings as described
23 by Raghunathan et al., would recognize that inlays, facets and polishing described in the ‘259,
24 the ‘040, the ‘692, the ‘743 and the ‘791 patents respectively would also improve the appearance
25 of tungsten carbide rings. Forming inlays, grinding and polishing are techniques within the
26 purview of a person of ordinary skill.

27 The above-identified examples of combinations are given merely to illustrate various

motivations to combine and are not intended to provide an exhaustive list of every possible combination to which the motivation may apply. Nor is such a list required by Patent Rule 3-3. Crown Ring therefore reserves its right to contend that the above-described motivations to combine apply to other combinations.

IV. CLAIM CHARTS PER PATENT L.R. 3-3(c)

In the following Invalidity Claim Charts, Crown Ring has cited representative portions of identified references, even where a reference may contain additional support for a particular claim element. Persons of ordinary skill in the art at the time of the filing of the Patents in suit knew to read references as a whole, and in the context of other publications and literature and the general knowledge in the field. Crown Ring may rely on all such information, including uncited portions of the prior art references listed herein, and on other publications and expert testimony, to provide context and as aids to understanding and interpreting the listed references, or to establish that a person of ordinary skill in the art would have been motivated to modify or combine any of the cited references so as to render the claims obvious. Additionally, citations to a particular figure in a prior art reference encompass all text relating to the figure, and citations to text encompass all figures relating to that text.

'734 patent

Claim Language	Prior Art
Claim 16	
A method of providing a tungsten-carbide based annular jewelry article having a desired surface profile and including an annular band which comprises	<p><u>Raghunathan et al.</u>, p. 21, Fig. 1, shows ring-shaped parts made of tungsten carbide. These parts were in existence at least by April of 1996.</p> <p><u>Fujimora</u> teaches a method of providing a jewelry article made of a hard material comprising tungsten carbide that is ground and polished to a mirror finish. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).</p>

Flanagan states, “if the ring shape is to be used for jewelry, e.g., a watch case”. (col. 3, lines 38-40).

Nippon Tungsten teaches a method of providing watch cases, necklaces, or other ornamental parts made of a hard alloy containing 82 weight percent tungsten carbide and metal binder materials. (English translation of Abstract).

Maruyama teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. Maruyama teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).

Bager teaches a finger ring with rigidity of structure. Bager teaches “finishing the surfaces of said blank according to taste”. (col. 1, lines 1-15).

Lederrey teaches a method of providing a tungsten-carbide based jewelry article (watch case) having a desired surface profile and having an annular portion. (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8; col. 2, lines 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-6, 17-28, 37-40; col. 3, line 70 – col. 4, line 2; col. 5, lines 4-26, 33-57, and 63-67; Figs. 1 and 7).

Rein teaches a finger ring (such as a wedding ring) made of tungsten carbide and having aesthetic appearance and shape. Rein states, “it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).

West has admitted that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of

any desired shape including a shape of a pipe. Further, West has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon, and a tungsten-carbide based ring that has a desired surface profile and is the size of a wedding band would have been easily made of it (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches making annular jewelry articles comprising tungsten carbide (col. 2, lines 25-27; col. 5, line 74 through col. 6, line 8; col. 9, lines 56-58; col. 10, lines 9-10). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [*sic*] to list all possible types of jewelry" (col. 5, lines 64-67). Also, Iler acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).

Stanley testified that in or around 1991 he made a tungsten-carbide based annular jewelry ring having a desired surface profile, which was worn as a finger ring by Stanley for a period of approximately six months (Stanley deposition, p. 18 line 6 through p. 23 line 12; p. 24 line 7 through p. 37 line 5; p. 45 line 10 through p. 46 line 24; p. 48 line 21 through p. 50 line 7; Exhs. A and B; p. 52 lines 14-22).

1 providing a mixture of two or
2 more powdered materials
3 which consist essentially of at
4 least 50 weight percent
tungsten carbide

Raghunathan et al., p. 23 teaches using “WC aluminide composites (81% WC max).” Raghunathan et al., p. 21 teaches sintering tungsten carbide articles: “Most cemented carbides are manufactured by powder metallurgy process consisting of WC powder production, powder consolidation, sintering and post-sinter forming.”

Fujimora teaches providing a mixture of two or more powdered materials which consist essentially of 82 weight percent tungsten carbide. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).

Nippon Tungsten teaches providing a mixture of two or more powdered materials consisting essentially of 82 weight percent tungsten carbide. (English translation of Abstract).

Maruyama teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. Maruyama teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).

Lederrey teaches providing a mixture of a powder of tungsten carbide and a powder of a bonding metal. (col. 1, lines 65-69).

West has admitted that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring were known in the prior art and were not invented by him. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon. (McKinnon deposition, p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402,

1		403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 153 line 24 through p. 154 line 9).
2		
3		<u>Iler</u> teaches providing a mixture of two or more powdered
4		materials which contains at least 50 weight percent tungsten
5		carbide (col. 2, lines 15-32). <u>Iler</u> further teaches that suitable
6		carbides such as tungsten carbide can be prepared by means
7		well-known to the art or they can be obtained commercially
8		(col. 4, lines 24-26).
9		<u>Stanley</u> testified that his finger ring was made of a mixture of
10		two or more powdered materials which consist essentially of
11		at least 50 weight percent tungsten carbide (p. 32 lines 7-12; p.
12		33 lines 16-18; p. 52 lines 14-22).
13	to form the annular article	<u>Raghunathan et al.</u> , p. 21 teaches sintering tungsten carbide
14	into a pressure mold having a	articles: "Most cemented carbides are manufactured by
15	cavity of predetermined	powder metallurgy process consisting of WC powder
16	annular configuration and	production, powder consolidation, sintering and post-sinter
17	sized formed therein, the size	forming."
18	of the mold being greater than	<u>Nippon Tungsten</u> teaches that the powdered mixture is
19	the final size of the annular	compression molded under 1.5 ton/cm ² . (English translation of
20	band;	Abstract).
21		<u>Lederrey</u> states that the "mixture is then submitted to a
22		preliminary sintering so as to form a solid block which can
23		however still be machined easily for instance by means of a
24		diamond tool. Pieces having a shape similar to that of the
25		workpieces which are to be manufactured are then cut from
26		said block and introduced into a furnace to carry out the final
27		sintering thereof. During the last operation a shrinkage of
		about 20% by volume can be observed....The shape of the
		piece cut out of said block has to be calculated with respect to
		that of piece 1 while considering the shrinkage of about 20%
		by volume". (col. 1, line 70 – col. 2, line 7; col. 3, lines 24-
		27).
		<u>West</u> has admitted that the compositions/formula of tungsten
		carbide material and the method of making tungsten carbide
		blanks used for West's tungsten carbide ring were known in
		the prior art and were not invented by him. <u>West</u> has
		acknowledged a tungsten-carbide based watch and watch
		bracelet made by Rado as prior art, based upon which he
		developed his tungsten carbide ring. <u>West</u> has admitted that,
		prior to his conception of a tungsten carbide ring, carbide
		companies had been manufacturing tungsten carbide blanks of

1		any desired shape including a shape of a pipe. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		
4		
5		
6		<u>McKinnon</u> testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. Also,
7		<u>McKinnon</u> testified that it was well known in the prior art that the size of the mold should be greater than the final size of the annular band because tungsten carbide material shrinks during the sintering process (McKinnon deposition, p. 17 line 2 through p. 18 line 20; p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).
8		
9		
10		
11		
12		
13		
14		
15		
16		The '333 patent teaches "such a metal can be brought to the desired form by taking the powder of the element, as in the case of tungsten, and molding it into the desired shape in a hydraulic press, after which it is heated in a neutral or reducing atmosphere to sinter" (Col. 1, lines 42-49).
17		
18		
19		<u>Iler</u> teaches forming an annular jewelry article into a pressure mold having a cavity of predetermined annular configuration and sized formed therein (<i>e.g.</i> , col. 10, lines 1-59), the size of the mold being greater than the final size of the annular band (<i>e.g.</i> , col. 10, lines 50-51, 53).
20		
21		
22		<u>Stanley</u> testified that he formed the annular article into a pressure mold having a cavity of predetermined annular configuration and sized formed therein, where the size of the mold was greater than the final size of the annular band (p. 25 lines 7-13; p. 26 lines 1-6).
23		
24		
25	compressing the powdered material mixture at a pressure sufficient to form an annular blank; and	<u>Raghunathan et al.</u> , p.21, teaches "The powder is consolidated [...] by pressing and extrusion."
26		<u>Nippon Tungsten</u> teaches that the powdered mixture is
27		

1 compression molded under 1.5 ton/cm². (English translation of
2 Abstract).

3 Lederrey states that the “mixture is then submitted to a
4 preliminary sintering so as to form a solid block which can
5 however still be machined easily for instance by means of a
6 diamond tool. Pieces having a shape similar to that of the
7 workpieces which are to be manufactured are then cut from
8 said block and introduced into a furnace to carry out the final
9 sintering thereof.” (col. 1, line 70 – col. 2, line 7; col. 3, lines
10 17-21).

11 West has admitted that the compositions/formula of tungsten
12 carbide material and the method of making tungsten carbide
13 blanks used for West’s tungsten carbide ring were known in
14 the prior art and were not invented by him. West has
15 acknowledged a tungsten-carbide based watch and watch
16 bracelet made by Rado as prior art, based upon which he
17 developed his tungsten carbide ring. West has admitted that,
18 prior to his conception of a tungsten carbide ring, carbide
19 companies had been manufacturing tungsten carbide blanks of
20 any desired shape including a shape of a pipe. (West
21 deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55
22 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p.
23 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90
24 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line
25 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108
26 lines 3 – 8).

27 McKinnon testified that, prior to Trent West, General Carbide
had manufactured lots of tungsten carbide rings in various
dimensions, using the same method as used in making the
annular blanks for West’s tungsten carbide rings. Also,
McKinnon testified that the step of compressing the powdered
material mixture at a pressure sufficient to form an annular
blank was well known in the prior art (McKinnon deposition,
p. 17 line 2 through p. 18 line 20; p. 25 line 19 through p. 28
line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through
p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-
16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through
p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400,
401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p.
73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line
24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

The ‘333 patent teaches “such a metal can be brought to the

1		desired form by taking the powder of the element, as in the
2		case of tungsten, and molding it into the desired shape in a
3		hydraulic press, after which it is heated in a neutral or
4		reducing atmosphere to sinter” (Col. 1, lines 42-49).
5		<u>Iler</u> teaches compressing the powdered material mixture at a
6		pressure sufficient to form an annular blank (e.g., col. 10, lines
7		7-10 and lines 40-50).
8	sintering the annular blank at	<u>Stanley</u> testified that the powdered material mixture was
9	a temperature sufficient to	compressed at a pressure sufficient to form an annular blank
10	form the tungsten-carbide	(p. 25 lines 7-13).
11	based annular jewelry article.	<u>Raghunathan et al.</u> , p. 21, teaches sintering tungsten carbide
12		articles: “Most cemented carbides are manufactured by
13		powder metallurgy process consisting of WC powder
14		production, powder consolidation, sintering and post-sinter
15		forming.”
16		<u>Nippon Tungsten</u> teaches that the powdered mixture is
17		compression molded under 1.5 ton/cm ² , then presintered at
18		800 °C, and sintered at 1350 °C. (English translation of
19		Abstract).
20		<u>Lederrey</u> states that the “mixture is then submitted to a
21		preliminary sintering so as to form a solid block which can
22		however still be machined easily for instance by means of a
23		diamond tool. Pieces having a shape similar to that of the
24		workpieces which are to be manufactured are then cut from
25		said block and introduced into a furnace to carry out the final
26		sintering thereof.” (col. 1, line 70 – col. 2, line 7; col. 3, lines
27		17-29).
		<u>West</u> has admitted that the compositions/formula of tungsten
		carbide material, the method of making tungsten carbide
		blanks, and sintering the blanks, used for West’s tungsten
		carbide ring were known in the prior art and were not invented
		by him. <u>West</u> has acknowledged a tungsten-carbide based
		watch and watch bracelet made by Rado as prior art, based
		upon which he developed his tungsten carbide ring. <u>West</u> has
		admitted that, prior to his conception of a tungsten carbide
		ring, carbide companies had been manufacturing tungsten
		carbide blanks of any desired shape including a shape of a
		pipe. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line
		21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59
		line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line
		14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21;

1		p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		<u>McKinnon</u> testified that the step of sintering the annular blank at a temperature sufficient to form the tungsten-carbide based ring was well known in the prior art (McKinnon deposition, p. 17 line 2 through p. 18 line 20; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 153 line 24 through p. 154 line 9).
4		
5		
6		
7		
8		
9		The ‘333 patent teaches “such a metal can be brought to the desired form by taking the powder of the element, as in the case of tungsten, and molding it into the desired shape in a hydraulic press, after which it is heated in a neutral or reducing atmosphere to sinter.” (Col. 1, lines 42-49).
10		
11		
12		<u>Iler</u> teaches sintering the annular blank at a temperature sufficient to form the annular jewelry article (col. 5, lines 49-51; col. 10, lines 37-46; col. 6, lines 3-17).
13		
14		<u>Stanley</u> testified that the annular blank was sintered at a temperature sufficient to form the tungsten-carbide based annular jewelry article (p. 25 line 22 through p. 26 line 4).
15		
16		
17	Claim 18	
18	The method of claim 16 wherein the mixture includes at least 81 weight percent tungsten carbide.	<u>Fujimora</u> teaches providing a mixture of two or more powdered materials which consist essentially of 82 weight percent tungsten carbide. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).
19		
20		<u>Nippon Tungsten</u> teaches that the powdered mixture includes 82 weight percent tungsten carbide. (English translation of Abstract).
21		
22		<u>Maruyama</u> teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. <u>Maruyama</u> teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).
23		
24		
25		
26		
27		

1		<u>Lederrey</u> states that the “hardness of the material obtained by sintering a tungsten carbide powder is about 9 in the Moh’s scale.” (col. 5, lines 33-34).
2		
3		<u>West</u> has admitted that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring were known in the prior art and were not invented by him. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
4		
5		<u>McKinnon</u> testified that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon. (McKinnon deposition, p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 153 line 24 through p. 154 line 9).
6		
7		<u>Iler</u> teaches providing a mixture of two or more powdered materials which includes at least 81 weight percent tungsten carbide (col. 2, lines 24-27). <u>Iler</u> further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26).
8		
9		<u>Stanley</u> testified that the mixture included 85 weight percent or more tungsten carbide (p. 52 lines 17-22).
10		
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21	Claim 29	
22	The method of claim 16, wherein the annular article is provided with at least one depression comprising a groove, slot, or hole formed in an outer surface thereof.	<u>Oganesyan</u> teaches providing a finger ring with a groove formed in the outer surface of the ring in which there is hole. (col. 1, lines 56-66; Figs. 2, 3A, 8, and 9).
23		<u>Hawke</u> teaches methods for forming finger rings having inserts/inlays of a precious metal. <u>Hawke</u> teaches that a finger ring is provided with a recessed middle portion formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and 3).
24		<u>Brogan</u> teaches a method of forming a groove in a ring by machining in order to hold gems, form facets, or hold precious
25		
26		
27		

1	metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).
2	<u>Bager</u> teaches that the finger ring is provided with an annular
3	groove formed in an outer surface. (col. 1, lines 15-17).
4	<u>Lederrey</u> teaches a half cylindrical recess, an annular central
5	hole, blind holes, and two recesses, formed in an outer surface
6	of the jewelry article. (col. 3, lines 3-5, 43-45; col. 5, lines 8-
7	13; Figs. 1-4 and 7).
8	<u>Rein</u> teaches providing a finger ring with a recess on its outer
9	surface within which precious stones, plastics, ceramics, glass,
10	amber, or other material can be inserted. (col. 1, lines 32-36;
11	col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-15).
12	<u>West</u> has admitted that, prior to his conception of a tungsten
13	carbide ring, carbide companies had been manufacturing
14	tungsten carbide blanks of any desired shape. Further, <u>West</u>
15	has admitted that a grind shop, not West himself, was the one
16	who turned the tungsten carbide blanks into rings as grinding
17	a tungsten carbide blank was well known in the prior art.
18	(West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 –
19	p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9
20	– p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p.
21	90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97
22	line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108
23	lines 3 – 8).
24	<u>McKinnon</u> testified that it would have been obvious to provide
25	the annular article with a depression comprising a groove, slot,
26	or hole formed in an outer surface (p. 163 line 22 through p.
27	164 line 3).
	<u>Iler</u> teaches that the annular article has at least one depression
	comprising a groove, slot, or hole formed in an outer surface
	so that it is used as a mount for stones, gems, minerals, or any
	other decoration (col. 5, lines 60-61; col. 5, line 70 through
	col. 6, line 2; col. 10, lines 10-12). Also, <u>Iler</u> states that
	“[m]ethods for fabricating such item of jewelry as well as
	methods for cutting, shaping and polishing the dense
	compositions will be apparent to those skilled in the art” (col.
	6, lines 19-21).
	<u>Stanley</u> testified that any desired shape could be formed (p. 26
	lines 1-4).

Claim 33

The method of claim 16, further comprising the step of finish polishing at least one outer surface of the annular article.

Fujimora teaches polishing to a mirror finish a jewelry article made of tungsten carbide. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).

Nippon Tungsten teaches that the powdered mixture is compression molded, sintered, and ground using diamond. (English translation of Abstract).

Maruyama teaches that the hard alloy has polishing brightness characteristics. (English translation of Abstract).

Bager teaches finishing the surfaces of the annular blank according to taste. (col. 1, lines 12-15).

Lederrey teaches that at least one outer surface of the jewelry article is polished. (col. 2, lines 55-60; col. 3, lines 37-39; col. 5, lines 18-21).

West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. The watch and watch bracelet made by Rado has a polished surface. Further, West has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art (West deposition, p. 45 line 16 – p. 46 line 21; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24).

McKinnon testified that the step of finish polishing an outer surface of the annular article was well known in the prior art (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches the step of finish polishing at least one outer surface of the annular article (col. 8, lines 17-32 and lines 58-59; col. 10, lines 60-66; col. 11, lines 35-37 and lines 53-59). Also, Iler states that “[m]ethods for fabricating such item of

1		jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
2		
3		<u>Stanley</u> testified that the method further comprised the step of
4		finish polishing at least one outer surface of the annular article
5		(p. 28 line 23 through p. 29 line 1; p. 31 lines 18-21; p.32 line 20 through p. 33 line 9).
6	Claim 34	
7	The method of claim 16,	<u>Lampert</u> teaches providing a metal jewelry article with a
8	further comprising a step of	plurality of faceted reflective surfaces, wherein the faceted
9	modifying the outer surface to	reflective surfaces are angled and positioned so as to reflect
10	provide a non-polished	light in a manner which simulates a diamond, and,
11	portion thereof.	accordingly, the artificial diamond baguettes do not require
12		polishing. (Abstract; Fig. 1).
13		<u>Bager</u> teaches finishing the surfaces of the annular blank
14		according to taste. (col. 1, lines 12-15).
15		<u>McKinnon</u> testified that a step of modifying the outer surface
16		to provide any desired surface profile was well known in the
17		art (p. 25 line 19 through p. 26 line 10).
18		<u>Iler</u> teaches a step of modifying the outer surface to provide a
19		desired surface profile including a non-polished portion (col.
20		8, lines 28-32). Also, <u>Iler</u> states that “[m]ethods for
21		fabricating such item of jewelry as well as methods for
22		cutting, shaping and polishing the dense compositions will be
23		apparent to those skilled in the art” (col. 6, lines 19-21).
24		<u>Stanley</u> testified that a portion of the outer surface was non-
25		polished (p. 31 lines 18-21).
26	Claim 35	
27	The method of claim 16,	<u>Oganesyan</u> teaches providing the ring with at least one flat or
	wherein the annular article	curved facet formed in the outer surface of the ring. (Figs. 2,
	has at least one flat or curved	3A, 8, and 9).
	facet formed in an outer	<u>Hawke</u> teaches providing an annular article having at least one
	surface thereof.	flat or curved facet formed in an outer surface thereof. (Figs. 1
		and 3).
		<u>Brogan</u> teaches that the ring has at least one flat or curved
		facet formed in an outer surface. (col. 1, lines 13-17 and 34-
		40; Figs. 3-6).

Lampert teaches providing a metal jewelry article with a plurality of faceted reflective surfaces (Abstract; Fig. 1).

Bager teaches that the finger ring has at least one flat or curved facet formed in an outer surface. (Fig. 4).

Lederrey teaches that the jewelry article has at least one flat or conical facet formed in an outer surface. (col. 2, lines 54-60; col. 5, lines 15-16; Figs. 1, 2, 4, and 7).

Rein teaches a finger ring having both curved and flat surfaces. (col. 7, lines 17-33).

West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape. Further, West has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that providing the annular article with any desired surface profile or shape was well known in the art (p. 25 line 19 through p. 26 line 21; p. 163 line 22 through p. 164 line 3).

Iler teaches that the annular article has at least one flat or curved facet formed in an outer surface so that it is used as a mount for stones, gems, minerals, or any other decoration (col. 5, lines 60-61; col. 5, line 70 through col. 6, line 2; col. 10, lines 10-12). Also, Iler states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).

Stanley testified that the annular article has at least one flat or curved facet formed in an outer surface (p. 33 lines 2-6).

‘736 patent

Claim Language	Prior art
Claim 1	
<p>A method of making a jewelry article which comprises: providing an annular substrate formed of a hard material predominantly comprising tungsten carbide and</p>	<p><u>Raghunathan et al.</u>, p. 21, Fig. 1 shows ring-shaped parts made of tungsten carbide. Further, <u>Raghunathan et al.</u>, p. 23 teaches using “WC aluminide composites (81% WC max).”</p> <p><u>Fujimora</u> teaches a method of providing a jewelry article made of a hard material predominantly comprising tungsten carbide that is ground and polished to a mirror finish. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).</p> <p><u>Flanagan</u> states, “if the ring shape is to be used for jewelry, e.g., a watch case”. (col. 3, lines 38-40).</p> <p><u>Nippon Tungsten</u> teaches a method of providing watch cases, necklaces, or other ornamental parts made of a hard alloy containing 82 weight percent tungsten carbide. (English translation of Abstract).</p> <p><u>Maruyama</u> teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. <u>Maruyama</u> teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).</p> <p><u>Bager</u> teaches a finger ring with rigidity of structure. (col. 1, lines 1-15).</p> <p><u>Lederrey</u> teaches a method of providing a tungsten-carbide based jewelry article (watch case) having an annular portion. (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8; col. 2, lines 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-6, 17-28, 37-40; col. 3, line 70 – col. 4, line 2; col. 5, lines 4-26, 33-57, and 63-67; Figs. 1 and 7).</p> <p><u>Rein</u> teaches a finger ring (such as a wedding ring) made of tungsten carbide. <u>Rein</u> states, “it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).</p>

West has admitted that the compositions/formula of tungsten carbide material and the method of making tungsten carbide blanks used for West's tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape including a shape of a pipe. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon, and a tungsten-carbide based ring that is the size of a wedding band would have been easily made of it. Further, McKinnon testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches a method of making annular jewelry articles which comprises providing an annular substrate formed of a hard material predominantly comprising tungsten carbide (col. 2, lines 24-27; col. 5, line 74 through col. 6, line 8; col. 9, lines 56-58; col. 10, lines 9-10; col. 8, lines 67-70; col. 1, lines 48-55; col. 6, lines 25-28 and lines 41-45). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known and the size, shapes, combinations

1		of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry” (col. 5, lines 64-67). Also, <u>Iler</u>
2		acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).
3		
4		<u>Stanley</u> testified that in or around 1991 he made a tungsten-carbide based annular jewelry ring, which was worn as a
5		finger ring by Stanley for a period of approximately six months: the method of making the ring comprised providing
6		an annular substrate formed of a hard material predominantly comprising tungsten carbide (Stanley deposition, p. 18 line 6
7		through p. 23 line 12; p. 24 line 7 through p. 37 line 5; p. 45 line 10 through p. 46 line 24; p. 48 line 21 through p. 50 line
8		7; Exhs. A and B; p. 52 lines 14-22).
9		
10	having an outer surface with an outer diameter and a depression disposed circumferentially in its outer surface;	<u>The ‘259 patent</u> teaches depressions “blind holes” formed in the surface of the ring. (Figs 1-5, Col. 2, lines 42-45.)
11		<u>Oganesyan</u> teaches providing a finger ring with a groove formed at least partially around the circumference of the ring. (col. 1, lines 56-66; Figs. 2, 3A, 8, and 9).
12		
13		<u>Hawke</u> teaches methods for forming finger rings having inserts/inlays of a precious metal. <u>Hawke</u> teaches providing a
14		finger ring with a recessed middle portion circumferentially formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and 3).
15		
16		<u>Brogan</u> teaches a method of forming a groove disposed circumferentially in a ring by machining in order to hold
17		gems, form facets, or hold precious metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).
18		
19		<u>Bager</u> teaches a depression disposed circumferentially in the outer surface of the finger ring. (col. 1, lines 15-17; Fig. 4).
20		
21		<u>Lederrey</u> teaches a half cylindrical recess, an annular central hole, blind holes, and two recesses, formed in an outer surface of the jewelry article. (col. 3, lines 3-5, 43-45; col. 5, lines 8-13; Figs. 1-4 and 7).
22		
23		<u>Rein</u> teaches providing a finger ring with a recess on its outer surface within which precious stones, plastics, ceramics, glass, amber, or other material can be inserted. (col. 1, lines 32-36; col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-15).
24		
25		<u>West</u> has admitted that, prior to his conception of a tungsten
26		
27		

1		carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape. Further, <u>West</u> has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		
4		
5		
6		
7		
8		<u>McKinnon</u> testified that providing the annular substrate with any desired surface profile or shape was well known in the prior art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through p. 164 line 3).
9		
10		
11		<u>Iler</u> teaches that the annular article has a depression disposed circumferentially in its outer surface so as to be used as a mount for stones, gems, minerals, or any other decoration (col. 5, lines 60-61; col. 5, line 70 through col. 6, line 2; col. 10, lines 10-12). Also, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
12		
13		
14		
15		
16		<u>Stanley</u> testified that any desired shape could be formed (p. 26 lines 1-4; p. 29 lines 2-11).
17	providing a metal band having an inner diameter that is greater than the outer diameter of the annular substrate; and	<u>Hawke</u> teaches providing an insert of previous metal band within the recessed middle portion. (pp. 1-2; Figs. 1 and 3).
18		
19		<u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).
20		
21		
22		
23		
24		<u>Lederrey</u> teaches providing a metal ring preferably made of stainless steel, which is to be set with force fit into the outer protecting and ornamental body made of tungsten carbide. The inner diameter of the metal ring is greater than the outer diameter of the annular portion of the outer tungsten carbide body. (col. 3, lines 54-57; col. 3, line 75 – col. 4, line 2; Fig. 2).
25		
26		
27		

1		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 7, lines 17-32).
2		
3		<u>West</u> has admitted that joining two different metals together was well known in the prior art. (p. 110 line 12 – p. 114 line p. 13; p. 118 lines 9-13).
4		
5		<u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [sic] to list all possible types of jewelry...The compositions of this invention can be used alone or in combination with any structural materials or materials of apparel including metal...” (col. 5, lines 64-72). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
6		
7		
8		
9		
10		
11	inwardly deforming the metal band to squeeze it into the depression in the outer surface of the annular substrate so as to form the jewelry article,	<u>The ‘259 patent</u> teaches that inlays are “inserted therein and brazed or soldered” (col. 2, lines 63-66).
12		
13		<u>Hawke</u> teaches that the insert is slipped into position so that it encircles the recessed middle portion of the finger ring, and further teaches that the insert will be a tight fit on the recessed middle portion. (pp. 2-3; Figs. 1 and 3).
14		
15		<u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).
16		
17		<u>Lederrey</u> teaches that the metal ring is set with force fit into the outer protecting and ornamental body made of tungsten carbide. (col. 3, lines 54-57; col. 3, line 75 – col. 4, line 2; Fig. 2).
18		
19		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 7, lines 17-32).
20		
21		<u>West</u> has admitted that joining two different metals together was well known in the prior art. <u>West</u> has testified that what is unique and new about his method of inlaying another metal into a tungsten carbide is melting the metal in the tungsten carbide
22		
23		
24		
25		
26		
27		

1		substrate in a vacuum. Such element, however, is not required
2		in this claim. (p. 110 line 12 – p. 115 line p. 4; p. 118 lines 9-
3		13).
4		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
5		size, shapes, combinations of materials used and areas of use
6		are so broad that it is impossible and should be unnecessary
7		[sic] to list all possible types of jewelry....The compositions of
8		this invention can be used alone or in combination with any
9		structural materials or materials of apparel including
10		metal....Combinations can be made for example by brazing,
11		soldering, gluing, cementing, inseting, pegging, and
12		sewing...” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u>
13		states that “[m]ethods for fabricating such item of jewelry as
14		well as methods for cutting, shaping and polishing the dense
15		compositions will be apparent to those skilled in the art” (col.
16		6, lines 19-21).
17	wherein the hard material is	<u>Fujimora</u> teaches that the hard material has hardness in excess
18	sufficiently hard to avoid	of Hv 1,000 and is essentially mar-proof. (col. 1, lines 4-17,
19	being deformed during the	20-27; col. 2, lines 22-45).
20	inward deforming of the metal	<u>Lederrey</u> states, “[t]he hardness of the material obtained by
21	band.	sintering a tungsten carbide powder is about 9 in the Moh’s
22		scale. Said material is thus harder than topaz, which is about 8
23		in the Moh’s scale....A piece made of sintered tungsten
24		carbide will therefore not be scratched by the usual
25		materials....The improved watch case according to the
26		invention has thus the advantage to keep its original
27		appearance during a period which is practically non-limited,
		even if it is carried under the most extensive conditions. Its
		polished outer surfaces will always show the same brightness
		and it will never be damaged by scratches.” (col. 5, lines 33-
		49).
		<u>Rein</u> states, “it is advantageous to make both the contacts and
		the surrounding ring elements of material which is as hard and
		abrasion-resistant as possible, for instance steel, tungsten
		carbide or non-ferrous metal alloys, since less wear thus takes
		place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26; Figs.
		12-14).
		<u>West</u> has admitted that the compositions/formula of tungsten
		carbide material and the method of making tungsten carbide
		blanks used for West’s tungsten carbide ring were known in
		the prior art and were not invented by him. (West deposition,
		p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57

1		lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74
2		lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94
3		line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line
4		24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
5		<u>McKinnon</u> testified that the compositions/formula of tungsten
6		carbide material used for West's tungsten carbide ring was
7		known in the prior art and had been developed and chosen by
8		McKinnon (McKinnon deposition, p. 25 line 19 through p. 28
9		line 1; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through
10		p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines
11		12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p.
12		65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13
13		through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133
14		lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22
15		through p. 164 line 3).
16		<u>Iler</u> teaches that the hard material is characterized by its
17		outstanding toughness and hardness, high mechanical strength,
18		density, etc. (col. 6, lines 25-28; col. 1, lines 51-54). Also, the
19		annular substrate formed of the hard material in <u>Iler</u> does not
20		break or chip when it is allowed to freely fall on a hardwood
21		floor from a height of seven feet (col. 6, lines 41-45).
22		<u>Stanley</u> ring is inherently hard because it was made of 85
23		weight percent or more tungsten carbide (<i>see also</i> , p. 71 lines
24		6-7).
25	Claim 10	
26	The method of claim 1,	<u>Fujimora</u> teaches a method of providing a jewelry article made
27	wherein the hard material is	of a hard material consisting essentially of tungsten carbide
28	formed by sintering powders	and a metal binder material. (col. 1, lines 4-17, 20-27; col. 2,
29	that consist essentially of	lines 22-45).
30	tungsten carbide and a metal	<u>Nippon Tungsten</u> teaches that the hard alloy is formed by
31	binder material.	sintering powders consisting essentially of tungsten carbide
32		and a metal binder material. (English translation of Abstract).
33		<u>Maruyama</u> teaches that a hard alloy containing tungsten
34		carbide and a metal binder material is prepared by a powder
35		metallurgical method, wherein the hard alloy contains
36		tungsten carbide as much as 91 weight percent. (English
37		translation of Abstract; table 1 on page 254).
38		<u>Lederrey</u> teaches providing a mixture of a powder of tungsten
39		carbide and a powder of a bonding metal. (col. 1, lines 65-

69). Lederrey states that the “mixture is then submitted to a preliminary sintering so as to form a solid block which can however still be machined easily for instance by means of a diamond tool. Pieces having a shape similar to that of the workpieces which are to be manufactured are then cut from said block and introduced into a furnace to carry out the final sintering thereof.” (col. 1, line 70 – col. 2, line 7; col. 3, lines 17-29).

West has admitted that the compositions/formula of tungsten carbide material, the method of making tungsten carbide blanks, and sintering process, used for West’s tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the method of forming the hard material by sintering powders that consist essentially of tungsten carbide and a metal binder material was well known in the prior art (McKinnon deposition, p. 17 line 2 through p. 18 line 20; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 153 line 24 through p. 154 line 9).

Iler teaches that the hard material is formed by sintering powders that contain 70 volume percent of tungsten carbide and a metal binder material (col. 2, lines 24-32; col. 5, lines 49-51; col. 10, lines 37-46). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26).

Stanley testified that the hard material was formed by sintering powders that consisted essentially of tungsten carbide and a metal binder material (p. 32 lines 7-12; p. 33 lines 16-18; p. 52 lines 14-22; p. 25 line 22 through p. 26 line 4).

Claim 24

A method of making a jewelry article which comprises:
providing an annular substrate formed of a hard material comprising tungsten carbide and

Raghunathan et al., p. 21, Fig. 1 shows ring-shaped parts made of tungsten carbide.

Fujimora teaches a method of providing a jewelry article made of a hard material comprising tungsten carbide that is ground and polished to a mirror finish. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).

Flanagan states, "if the ring shape is to be used for jewelry, e.g., a watch case". (col. 3, lines 38-40).

Nippon Tungsten teaches a method of providing watch cases, necklaces, or other ornamental parts made of a hard alloy containing 82 weight percent tungsten carbide. (English translation of Abstract).

Maruyama teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. Maruyama teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).

Bager teaches a finger ring with rigidity of structure. (col.1, lines 1-9).

Lederrey teaches a method of providing a tungsten-carbide based jewelry article (watch case) having an annular portion. (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8; col. 2, lines 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-6, 17-28, 37-40; col. 3, line 70 – col. 4, line 2; col. 5, lines 4-26, 33-57, and 63-67; Figs. 1 and 7).

Rein teaches a finger ring (such as a wedding ring) made of tungsten carbide. Rein states, "it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use." (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).

West has admitted that the compositions/formula of tungsten

carbide material and the method of making tungsten carbide blanks used for West's tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape including a shape of a pipe. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon, and a tungsten-carbide based ring that is the size of a wedding band would have been easily made of it. Further, McKinnon testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches a method of making annular jewelry articles which comprises providing an annular substrate formed of a hard material comprising tungsten carbide (col. 2, lines 24-27; col. 5, line 74 through col. 6, line 8; col. 9, lines 56-58; col. 10, lines 9-10; col. 8, lines 67-70; col. 1, lines 48-55; col. 6, lines 25-28 and lines 41-45). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [*sic*] to list all possible types of

1		jewelry” (col. 5, lines 64-67). Also, <u>Iler</u> acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).
2		
3		<u>Stanley</u> testified that in or around 1991 he made a tungsten-
4		carbide based annular jewelry ring, which was worn as a
5		finger ring by Stanley for a period of approximately six
6		months: the method of making the ring comprised providing
7		an annular substrate formed of a hard material comprising
8		tungsten carbide (Stanley deposition, p. 18 line 6 through p.
9	having an outer surface with	23 line 12; p. 24 line 7 through p. 37 line 5; p. 45 line 10
10	an outer diameter and a	through p. 46 line 24; p. 48 line 21 through p. 50 line 7; Exhs.
11	depression which comprises	A and B; p. 52 lines 14-22).
12	one or more apertures in the	
13	annular band and which	The ‘259 patent teaches depressions “blind holes” formed in
14	depression is disposed	the surface of the ring. (see Figs 1-5, Col. 2, lines 42-45).
15	circumferentially in its outer	
16	surface;	<u>Oganesyan</u> teaches providing a finger ring with a groove
17		formed in the outer surface of the ring in which there is a hole.
18		(col. 1, lines 56-66; Figs. 2, 3A, 8, and 9).
19		<u>Hawke</u> teaches methods for forming finger rings having
20		inserts/inlays of a precious metal. <u>Hawke</u> teaches providing a
21		finger ring with a recessed middle portion circumferentially
22		formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and 3).
23		<u>Brogan</u> teaches a method of forming a groove disposed
24		circumferentially in a ring by machining in order to hold
25		gems, form facets, or hold precious metals. (col. 1, lines 13-17
26		and 34-40; Figs. 3-6).
27		<u>Bager</u> teaches that the finger ring is provided with an annular
		groove disposed circumferentially in its outer surface. (col. 1,
		lines 15-17; Fig. 4).
		<u>Lederrey</u> teaches a half cylindrical recess, an annular central
		hole, blind holes, and two recesses, formed in an outer surface
		of the jewelry article. (col. 3, lines 3-5, 43-45; col. 5, lines 8-
		13; Figs. 1-4 and 7).
		<u>Rein</u> teaches providing a finger ring with a recess on its outer
		surface within which precious stones, plastics, ceramics, glass,
		amber, or other material can be inserted. (col. 1, lines 32-36;
		col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-15).
		<u>West</u> has admitted that, prior to his conception of a tungsten
		carbide ring, carbide companies had been manufacturing

1		tungsten carbide blanks of any desired shape. Further, <u>West</u>
2		has admitted that a grind shop, not West himself, was the one
3		who turned the tungsten carbide blanks into rings as grinding a
4		tungsten carbide blank was well known in the prior art. (West
5		deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55
6		line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p.
7		61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90
8		lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line
9		20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines
10		3 – 8).
11		<u>McKinnon</u> testified that providing the annular band with any
12		desired surface profile or shape was well known in the prior
13		art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through p.
14		164 line 3).
15		<u>Iler</u> teaches that the annular article has a depression which
16		comprises one or more apertures in the annular band and
17		which is disposed circumferentially in its outer surface so as to
18		be used as a mount for stones, gems, minerals, or any other
19		decoration (col. 5, lines 60-61; col. 5, line 70 through col. 6,
20		line 2; col. 10, lines 10-12). Also, <u>Iler</u> states that “[m]ethods
21		for fabricating such item of jewelry as well as methods for
22		cutting, shaping and polishing the dense compositions will be
23		apparent to those skilled in the art” (col. 6, lines 19-21).
24		<u>Stanley</u> testified that any desired shape could be formed (p. 26
25		lines 1-4; p. 29 lines 2-11).
26	providing a metal band having	<u>Hawke</u> teaches providing an insert of previous metal band
27	an inner diameter that is	within the recessed middle portion. (pp. 1-2; Figs. 1 and 3).
	greater than the outer diameter	<u>Bager</u> teaches “finishing the surfaces of said blank according to
	of the annular substrate; and	taste and turning into the periphery thereof an external annular
		groove having upstanding side walls; providing a strip of metal
		of the same or another variety having a section which will
		adapt it to fit the said groove when conformed thereto...curving
		the ornamenting strip into a ring surrounding the body portion
		in the groove thereof”. (col. 1, lines 14-24).
		<u>Lederrey</u> teaches providing a metal ring preferably made of
		stainless steel, which is to be set with force fit into the outer
		protecting and ornamental body made of tungsten carbide. The
		inner diameter of the metal ring is greater than the outer
		diameter of the annular portion of the outer tungsten carbide
		body. (col. 3, lines 54-57; col. 3, line 75 – col. 4, line 2; Fig. 2).

1		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 7, lines 17-32).
2		
3		<u>West</u> has admitted that joining two different metals together was well known in the prior art. (p. 110 line 12 – p. 114 line p. 13; p. 118 lines 9-13).
4		
5		<u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [sic] to list all possible types of jewelry...The compositions of this invention can be used alone or in combination with any structural materials or materials of apparel including metal...” (col. 5, lines 64-72). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
6		
7		
8		
9		
10		
11	inwardly deforming the metal band to squeeze it into the depression in the outer surface of the annular substrate so as to form the jewelry article.	<u>The ‘259 patent</u> teaches that inlays are “inserted therein and brazed or soldered”. Col. 2, lines 63-66.
12		
13		<u>Hawke</u> teaches that the insert is slipped into position so that it encircles the recessed middle portion of the finger ring, and further teaches that the insert will be a tight fit on the recessed middle portion. (pp. 2-3; Figs. 1 and 3).
14		
15		<u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).
16		
17		<u>Lederrey</u> teaches that the metal ring is set with force fit into the outer protecting and ornamental body made of tungsten carbide. (col. 3, lines 54-57; col. 3, line 75 – col. 4, line 2; Fig. 2).
18		
19		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 7, lines 17-32).
20		
21		<u>West</u> has admitted that joining two different metals together was well known in the prior art. <u>West</u> has testified that what is unique and new about his method of inlaying another metal into a tungsten carbide is melting the metal in the tungsten
22		
23		
24		
25		
26		
27		

1		carbide substrate in a vacuum. Such element, however, is not
2		required in this claim. (p. 110 line 12 – p. 115 line p. 4; p. 118
3		lines 9-13).
4		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
5		size, shapes, combinations of materials used and areas of use
6		are so broad that it is impossible and should be unnecessary
7		[sic] to list all possible types of jewelry....The compositions
8		of this invention can be used alone or in combination with any
9		structural materials or materials of apparel including
10		metal....Combinations can be made for example by brazing,
11		soldering, gluing, cementing, inseting, pegging, and
12		sewing...” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u>
13		states that “[m]ethods for fabricating such item of jewelry as
14		well as methods for cutting, shaping and polishing the dense
15		compositions will be apparent to those skilled in the art” (col.
16		6, lines 19-21).

‘314 patent

Claim Language	Prior art
Claim 1	
A method of making a jewelry ring which comprises: providing an annular finger ring made of a hard material consisting essentially of tungsten carbide,	<p><u>Raghunathan et al.</u>, p. 21, Fig. 1 shows ring-shaped parts made of tungsten carbide. These parts existed at least in April of 1996.</p> <p><u>Fujimora</u> teaches a method of providing a jewelry article made of a hard material consisting essentially of tungsten carbide that is ground and polished to a mirror finish. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).</p> <p><u>Flanagan</u> states, “if the ring shape is to be used for jewelry, e.g., a watch case”. (col. 3, lines 38-40).</p> <p><u>Nippon Tungsten</u> teaches a method of providing watch cases, necklaces, or other ornamental parts made of a hard alloy containing 82 weight percent tungsten carbide and metal binder materials. (English translation of Abstract).</p> <p><u>Maruyama</u> teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains</p>

1 tungsten carbide as much as 91 weight percent. Maruyama
2 teaches that the hard alloy has mechanical strength, corrosion
3 resistance, and polishing brightness characteristics, and is
4 suitable for jewelry articles. (English translation of Abstract;
5 table 1 on page 254).

6 Bager teaches making a finger ring with rigidity of structure.
7 (col. 1, lines 1-9).

8 Lederrey teaches a method of providing a tungsten-carbide
9 based jewelry article (watch case) having an annular portion.
10 (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8; col. 2, lines
11 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-6, 17-28, 37-
12 40; col. 3, line 70 – col. 4, line 2; col. 5, lines 4-26, 33-57, and
13 63-67; Figs. 1 and 7).

14 Rein teaches a finger ring (such as a wedding ring) made of
15 tungsten carbide. Rein states, “it is advantageous to make
16 both the contacts and the surrounding ring elements of
17 material which is as hard and abrasion-resistant as possible,
18 for instance steel, tungsten carbide or non-ferrous metal
19 alloys, since less wear thus takes place upon use.” (col. 7,
20 lines 17-40; col. 2, lines 25-26; Figs. 12-14).

21 West has admitted that the compositions/formula of tungsten
22 carbide material and the method of making tungsten carbide
23 blanks used for West’s tungsten carbide ring were known in
24 the prior art and were not invented by him. West has
25 acknowledged a tungsten-carbide based watch and watch
26 bracelet made by Rado as prior art, based upon which he
27 developed his tungsten carbide ring. West has admitted that,
prior to his conception of a tungsten carbide ring, carbide
companies had been manufacturing tungsten carbide blanks of
any desired shape including a shape of a pipe. (West
deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55
line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p.
61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90
lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line
20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108
lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten
carbide material used for West’s tungsten carbide ring was
known in the prior art and had been developed and chosen by
McKinnon, and a tungsten-carbide based ring that is the size
of a wedding band would have been easily made of it.

1		Further, <u>McKinnon</u> testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).
2		
3		
4		
5		
6		
7		
8		
9		<u>Iler</u> teaches a method of making annular jewelry rings which comprises providing an annular ring made of a hard material containing 70 volume percent of tungsten carbide (col. 2, lines 24-27; col. 5, line 74 through col. 6, line 8; col. 9, lines 56-58; col. 10, lines 9-10; col. 8, lines 67-70; col. 1, lines 48-55; col. 6, lines 25-28 and lines 41-45). <u>Iler</u> further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry" (col. 5, lines 64-67). Also, <u>Iler</u> acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).
10		
11		
12		
13		
14		
15		
16		
17		
18		<u>Stanley</u> testified that in or around 1991 he made a tungsten-carbide based annular jewelry ring, which was worn as a finger ring by Stanley for a period of approximately six months: the method of making the ring comprised providing an annular finger ring made of a hard material consisting essentially of tungsten carbide (Stanley deposition, p. 18 line 6 through p. 23 line 12; p. 24 line 7 through p. 37 line 5; p. 45 line 10 through p. 46 line 24; p. 48 line 21 through p. 50 line 7; Exhs. A and B; p. 52 lines 14-22).
19		
20		
21		
22		
23	with the annular ring having at least one external facet and defining an aperture configured and dimensioned to receive a person's finger; and	The '885, '040, '692 and '743 patents each teach jewelry rings with facets.
24		<u>Lampert</u> teaches providing a metal jewelry ring with a plurality of faceted reflective surfaces. (Abstract; Fig. 1).
25		<u>Bager</u> teaches that the finger ring has at least one external facet and an aperture configured and dimensioned to receive a
26		
27		

person's finger. (Figs. 1 and 4).

Lederrey teaches that the jewelry article has at least one flat or conical facet formed in an outer surface. (col. 2, lines 54-60; col. 5, lines 15-16; Figs. 1, 2, 4, and 7).

Rein teaches a finger ring (such as a wedding ring) made of tungsten carbide. The finger ring has at least one external facet. (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-15).

West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape in various dimensions. Further, West has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. Also, McKinnon testified that providing the annular ring with any desired surface profile or shape was well known in the prior art (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches that the annular ring has at least one external facet and defines an aperture configured and dimensioned to receive a person's finger (col. 5, line 60 through col. 6, line 8). Iler states that "[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [*sic*] to list all possible types of jewelry..." (col. 5, line 64 through col. 6, line 1). Further, Iler states that "[m]ethods for

1		fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
2		
3		<u>Stanley</u> ring had at least one external facet and an aperture configured and dimensioned to receive a person’s finger (p. 33 lines 2-6; p. 29 lines 2-11).
4		
5	grinding the at least one	The ‘885, ‘040, ‘692 and ‘743 patents each teach jewelry rings
6	external facet to a	with facets, each having a predetermined shape: ‘885 teaches
7	predetermined shape to	triangular shape (Fig. 3); ‘040 teaches round shape (Fig. 1);
8	provide a pleasing appearance	‘692 teaches rectangular shape (Fig. 3); ‘743 also teaches
9	to the jewelry ring,	rectangular shape (Fig. 3).
10		<u>Fujimora</u> teaches a method of providing a jewelry article made
11		of a hard material comprising tungsten carbide that is ground
12		and polished to a mirror finish. (col. 1, lines 4-17, 20-27; col.
13		2, lines 22-45).
14		<u>Nippon Tungsten</u> teaches that the powdered mixture is
15		compression molded, sintered, and ground using diamond.
16		(English translation of Abstract).
17		<u>Lampert</u> teaches providing a metal jewelry ring with a
18		plurality of faceted reflective surfaces, wherein the faceted
19		reflective surfaces are angled and positioned so as to reflect
20		light in a manner which simulates a diamond. (Abstract; Fig.
21		1).
22		<u>Maruyama</u> teaches that the hard alloy has polishing brightness
23		characteristics. (English translation of Abstract).
24		<u>Bager</u> teaches finishing the surfaces of the annular blank
25		according to taste. (col. 1, lines 14-15).
26		<u>Lederrey</u> teaches that at least one external facet of the jewelry
27		article is polished. (col. 2, lines 55-60; col. 3, lines 37-39; col.
		5, lines 18-21).
		<u>Rein</u> teaches a finger ring having both curved and flat surfaces
		and having aesthetic appearance and shape. (col. 7, lines 17-
		33; col. 2, lines 25-26; Figs. 12-15).
		<u>West</u> has admitted that a grind shop, not West himself, was
		the one who turned the tungsten carbide blanks into rings as
		grinding a tungsten carbide blank was well known in the prior
		art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 58 lines

1		18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24).
2		
3		<u>McKinnon</u> testified that the step of grinding to provide a
4		desired surface profile or shape was well known in the prior
5		art (McKinnon deposition, p. 25 line 19 through p. 28 line 1;
6		p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36
7		line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p.
8		60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64
9		line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402,
10		403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-
11		7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24
12		through p. 154 line 9; p. 163 line 22 through p. 164 line 3).
13		
14		<u>Iler</u> teaches grinding the at least one external facet to a
15		predetermined shape to provide a desired appearance to the
16		jewelry ring (col. 8, lines 17-32 and lines 58-60; col. 10, lines
17		60-66; col. 11, lines 35-37 and lines 53-59). <u>Iler</u> states that
18		“[i]tems of jewelry are so well known and the size, shapes,
19		combinations of materials used and areas of use are so broad
20		that it is impossible and should be unnecessary [<i>sic</i>] to list all
21		possible types of jewelry....” (col. 5, line 64 through col. 6,
22		line 1). Further, <u>Iler</u> states that “[m]ethods for fabricating
23		such item of jewelry as well as methods for cutting, shaping
24		and polishing the dense compositions will be apparent to those
25		skilled in the art” (col. 6, lines 19-21).
26		
27		<u>Stanley</u> testified that the method further comprised the step of
28		finish polishing at least one outer surface of the annular article
29		(p. 28 line 23 through p. 29 line 1; p. 31 lines 18-21; p.32 line
30		20 through p. 33 line 9).
31	with the hard material being	<u>Fujimora</u> teaches that the hard material has hardness in excess
32	long wearing and virtually	of Hv 1,000 and is essentially mar-proof. (col. 1, lines 4-17,
33	indestructible during use of	20-27; col. 2, lines 22-45).
34	the jewelry ring.	
35		<u>Nippon Tungsten</u> teaches that the sintered alloy has a hardness
36		of 1290 Hv. (English translation of Abstract).
37		
38		<u>Maruyama</u> teaches that a hard alloy containing tungsten
39		carbide and a binding metal is prepared by a powder
40		metallurgical method, wherein the hard alloy contains
41		tungsten carbide as much as 91 weight percent. <u>Maruyama</u>
42		teaches that the hard alloy has mechanical strength, corrosion
43		resistance, and polishing brightness characteristics, and is
44		suitable for jewelry articles. (English translation of Abstract;

table 1 on page 254).

Lederrey states, “[t]he hardness of the material obtained by sintering a tungsten carbide powder is about 9 in the Moh’s scale. Said material is thus harder than topaz, which is about 8 in the Moh’s scale....A piece made of sintered tungsten carbide will therefore not be scratched by the usual materials....The improved watch case according to the invention has thus the advantage to keep its original appearance during a period which is practically non-limited, even if it is carried under the most extensive conditions. Its polished outer surfaces will always show the same brightness and it will never be damaged by scratches.” (col. 5, lines 33-49).

Rein states, “it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26).

West has admitted that the compositions/formula of tungsten carbide material and the method of making tungsten carbide blanks used for West’s tungsten carbide ring were known in the prior art and were not invented by him. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches that the hard material is long wearing and virtually indestructible during use of the jewelry ring (col. 6, lines 25-28 and lines 41-45; col. 1, lines 49-58).

	<p><u>Stanley</u> ring is inherently hard enough to be long wearing and virtually indestructible during use of the ring because it was made of 85 weight percent or more tungsten carbide (<i>see also</i>, p. 71 lines 6-7).</p>
<p>Claim 10</p>	
<p>The method of claim 1, which further comprises providing a cavity in the annular ring, the cavity having a predetermined size and shape that is configured to receive an insert of a decoration component that provides a substantially different visual effect to the jewelry ring.</p>	<p><u>Oganesyan</u> teaches providing a finger ring with a groove formed in the outer surface of the ring in which there is a hole to receive a gem. (col. 1, lines 56-66; Figs. 2, 3A, 8, and 9).</p> <p><u>Hawke</u> teaches methods for forming finger rings having inserts/inlays of a precious metal that provides a substantially different visual effect to the finger ring. <u>Hawke</u> teaches providing a finger ring with a recessed middle portion circumferentially formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and 3).</p> <p><u>Brogan</u> teaches a method of forming a groove in a ring by machining in order to hold gems, form facets, or hold precious metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).</p> <p><u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).</p> <p><u>Lederrey</u> teaches a half cylindrical recess, an annular central hole, blind holes, and two recesses, formed in an outer surface of the jewelry article. They are configured to receive components such as a winding and hand setting member, a watch movement, a bar, and a wrist band. (col. 3, lines 3-5, 43-45; col. 5, lines 8-13; Figs. 1-4 and 7).</p> <p><u>Rein</u> teaches providing a finger ring with a recess on its outer surface within which precious stones, plastics, ceramics, glass, amber, or other material can be inserted. (col. 1, lines 32-36; col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-15).</p> <p><u>West</u> has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape in various</p>

1		dimensions. Further, <u>West</u> has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		
4		
5		
6		
7		<u>McKinnon</u> testified that providing the annular band with any desired surface profile or shape was well known in the prior art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through p. 164 line 3).
8		
9		
10		<u>Iler</u> teaches providing a cavity in the annular ring, the cavity having a predetermined size and shape that is configured to receive an insert of a decoration component that provides a substantially different visual effect to the jewelry ring (col. 5, lines 60-61; col. 5, line 70 through col. 6, line 2; col. 10, lines 10-12). <u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry....” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
11		
12		
13		
14		
15		
16		
17		
18		<u>Stanley</u> testified that any desired shape could be formed (p. 26 lines 1-4; p. 29 lines 2-11).
19		
20	Claim 14	
21	The method of claim 10, which further comprises providing an insert of a visually different hard material, a precious metal or a gemstone in the cavity that extends into the annular ring, wherein the annular ring is integrally formed as a hardened substructure and the insert is provided in the cavity thereof.	<u>Oganesyan</u> teaches providing a finger ring with a groove formed in the outer surface of the ring in which there is a hole to receive a gem. (col. 1, lines 56-66; Figs. 2, 3A, 8, and 9).
22		
23		<u>Hawke</u> teaches methods for forming finger rings having inserts/inlays of a precious metal that provides a substantially different visual effect to the finger ring. <u>Hawke</u> teaches providing the insert within a recessed middle portion circumferentially formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and 3).
24		
25		
26		
27		<u>Brogan</u> teaches a method of forming a groove in a ring by

1 machining in order to hold gems, form facets, or hold precious
2 metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).

3 Bager teaches “finishing the surfaces of said blank according to
4 taste and turning into the periphery thereof an external annular
5 groove having upstanding side walls; providing a strip of metal
6 of the same or another variety having a section which will
7 adapt it to fit the said groove when conformed thereto...curving
8 the ornamenting strip into a ring surrounding the body portion
9 in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).

10 Lederrey teaches a half cylindrical recess, an annular central
11 hole, blind holes, and two recesses, formed in an outer surface
12 of the jewelry article. They are configured to receive
13 components such as a winding and hand setting member, a
14 watch movement, a bar, and a wrist band. Further, Lederrey
15 teaches that a metal ring preferably made of stainless steel is set
16 with force fit into the outer protecting and ornamental body
17 made of tungsten carbide. (col. 3, lines 3-5, 43-45, 54-57; col.
18 3, line 75 – col. 4, line 2; col. 5, lines 8-13; Figs. 1-4 and 7).

19 Rein teaches providing an annular ring integrally formed as a
20 hardened substructure with a recess on its outer surface within
21 which precious stones, plastics, ceramics, glass, amber, or
22 other material can be inserted. (col. 1, lines 32-36; col. 7, lines
23 36-40; col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-
24 15).

25 West has admitted that joining two different metals together
26 was well known in the prior art. West has testified that what
27 is unique and new about his method of inlaying another metal
into a tungsten carbide is melting the metal in the tungsten
carbide substrate in a vacuum. Such element, however, is not
required in this claim. West has admitted that the
compositions/formula of tungsten carbide material and the
method of making tungsten carbide blanks used for West’s
tungsten carbide ring were known in the prior art and were not
invented by him. (West deposition, p. 45 line 16 – p. 46 line
21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines
18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line
9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 –
p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p.
105 line 22; p. 108 lines 3 – 8; p. 110 line 12 – p. 115 line p.
4; p. 118 lines 9-13).

McKinnon testified that joining a tungsten carbide material

1		and other metal together was well known in the prior art (p. 20 line 19 through p. 23 line 13).
2		
3		<u>Iler</u> teaches providing an insert of a visually different hard material, a precious metal or a gemstone in the cavity that extends into the annular ring, wherein the annular ring is integrally formed as a hardened substructure and the insert is provided in the cavity (col. 5, line 60 through col. 6, line 21).
4		
5		
6	Claim 19	
7	The method of claim 1,	<u>Fujimora</u> teaches a method of providing a jewelry article made of a hard material consisting essentially of tungsten carbide and a metal binder material. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).
8	wherein the hard material is formed by sintering powders that consist essentially of at least tungsten carbide and a metal binder material.	<u>Nippon Tungsten</u> teaches that the hard material is formed by sintering powders that consist essentially of tungsten carbide and a metal binder material. (English translation of Abstract).
9		
10		<u>Maruyama</u> teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. (English translation of Abstract; table 1 on page 254).
11		
12		<u>Lederrey</u> teaches providing a mixture of a powder of tungsten carbide and a powder of a bonding metal. (col. 1, lines 65-69). <u>Lederrey</u> states that the “mixture is then submitted to a preliminary sintering so as to form a solid block which can however still be machined easily for instance by means of a diamond tool. Pieces having a shape similar to that of the workpieces which are to be manufactured are then cut from said block and introduced into a furnace to carry out the final sintering thereof.” (col. 1, line 70 – col. 2, line 7; col. 3, lines 17-29).
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		<u>West</u> has admitted that the compositions/formula of tungsten carbide material, the method of making tungsten carbide blanks, and sintering process, used for West’s tungsten carbide ring were known in the prior art and were not invented by him. <u>West</u> has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90
23		
24		
25		
26		
27		

1	lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line
2	20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108
3	lines 3 – 8).
4	<u>McKinnon</u> testified that the method of forming the hard
5	material by sintering powders that consist essentially of
6	tungsten carbide and a metal binder material was well known
7	in the prior art (McKinnon deposition, p. 17 line 2 through p.
8	18 line 20; p. 35 line 13 through p. 36 line 6; p. 47 line 8
9	through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61
10	lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-
11	25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68
12	line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25;
13	p. 153 line 24 through p. 154 line 9).
14	<u>Iler</u> teaches that the hard material is formed by sintering
15	powders that contain 70 volume percent of tungsten carbide
16	and a metal binder material (col. 2, lines 24-32; col. 5, lines
17	49-51; col. 10, lines 37-46). <u>Iler</u> further teaches that suitable
18	carbides such as tungsten carbide can be prepared by means
19	well-known to the art or they can be obtained commercially
20	(col. 4, lines 24-26).
21	<u>Stanley</u> testified that the hard material was formed by
22	sintering powders that consisted essentially of tungsten
23	carbide and a metal binder material (p. 32 lines 7-12; p. 33
24	lines 16-18; p. 52 lines 14-22; p. 25 line 22 through p. 26 line
25	4).

'972 patent

Claim Language	Prior art
Claim 1	
A finger ring comprising: an annular body made of a sintered hard material comprising a predominantly tungsten carbide material, wherein	<u>Raghunathan et al.</u> , p. 21, Fig. 1 shows ring-shaped parts made of tungsten carbide. <u>Raghunathan et al.</u> , p. 21 teaches sintering tungsten carbide articles: "Most cemented carbides are manufactured by powder metallurgy process consisting of WC powder production, powder consolidation, sintering and post-sinter forming." <u>Fujimora</u> teaches providing a jewelry article made of a hard material comprising predominantly tungsten carbide that is

1	ground and polished to a mirror finish. (col. 1, lines 4-17,
2	20-27; col. 2, lines 22-45).
3	<u>Flanagan</u> states, “if the ring shape is to be used for jewelry,
4	e.g., a watch case”. (col. 3, lines 38-40).
5	<u>Nippon Tungsten</u> teaches a method of providing watch
6	cases, necklaces, or other ornamental parts made of a
7	sintered hard material containing 82 weight percent tungsten
8	carbide. (English translation of Abstract).
9	<u>Maruyama</u> teaches that a hard alloy containing tungsten
10	carbide and a binding metal is prepared by a powder
11	metallurgical method, wherein the hard alloy contains
12	tungsten carbide as much as 91 weight percent. <u>Maruyama</u>
13	teaches that the hard alloy has mechanical strength,
14	corrosion resistance, and polishing brightness
15	characteristics, and is suitable for jewelry articles. (English
16	translation of Abstract; table 1 on page 254).
17	<u>Bager</u> teaches a finger ring with rigidity of structure. (col. 1,
18	lines 1-9).
19	<u>Lederrey</u> teaches a tungsten-carbide based jewelry article
20	(watch case) having an annular portion. <u>Lederrey</u> teaches
21	providing a mixture of a powder of tungsten carbide and a
22	powder of a bonding metal. (col. 1, lines 65-69). <u>Lederrey</u>
23	states that the “mixture is then submitted to a preliminary
24	sintering so as to form a solid block which can however still
25	be machined easily for instance by means of a diamond tool.
26	Pieces having a shape similar to that of the workpieces
27	which are to be manufactured are then cut from said block
	and introduced into a furnace to carry out the final sintering
	thereof.” (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8;
	col. 2, lines 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-
	6, 17-29, 37-40; col. 3, line 70 – col. 4, line 2; col. 5, lines
	4-26, 33-57, and 63-67; Figs. 1 and 7).
	<u>Rein</u> teaches a finger ring (such as a wedding ring) made of
	tungsten carbide. <u>Rein</u> states, “it is advantageous to make
	both the contacts and the surrounding ring elements of
	material which is as hard and abrasion-resistant as possible,
	for instance steel, tungsten carbide or non-ferrous metal
	alloys, since less wear thus takes place upon use.” (col. 7,
	lines 17-40; col. 2, lines 25-26; Figs. 12-14).

West has admitted that the compositions/formula of tungsten carbide material, the method of making tungsten carbide blanks, and sintering process, used for West's tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. West has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape including a shape of a pipe. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon, and a tungsten-carbide based ring that is the size of a wedding band would have been easily made of it. Further, McKinnon testified that, prior to Trent West, General Carbide had manufactured lots of tungsten carbide rings in various dimensions, using the same method as used in making the annular blanks for West's tungsten carbide rings. (McKinnon deposition, p. 17 line 20 through p. 18 line 20; p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).

Iler teaches annular jewelry articles comprising an annular body made of a sintered hard material comprising a predominantly tungsten carbide material (col. 2, lines 24-27; col. 5, line 74 through col. 6, line 8; col. 9, lines 56-58; col. 10, lines 9-10; col. 8, lines 67-70; col. 1, lines 48-55; col. 6, lines 25-28 and lines 41-45; col. 5, lines 49-51; col. 10, lines 37-46). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known

1		and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry” (col. 5, lines 64-67). Also, <u>Iler</u> acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).
2		
3		
4		
5		<u>Stanley</u> ring is a finger ring comprising an annular body made of a sintered hard material comprising a
6		predominantly tungsten carbide material (p. 32 lines 7-12; p. 33 lines 16-18; p. 52 lines 14-22; p. 25 line 22 through p. 26 line 4).
7		
8	the annular body has at least	<u>The ‘040, ‘692 and ‘743 patents</u> each teach jewelry rings with facets.
9	two external surfaces that are	
10	continuous and of a width	<u>Hawke</u> teaches an annular body having at least two external surfaces that are continuous and have a width. (Figs. 1 and 3).
11	sufficient to provide each	
12	external surface	<u>Brogan</u> teaches that a ring has at least two external surfaces that are continuous and have a width. (Figs. 3-6).
13		
14		<u>Lampert</u> teaches providing a metal jewelry ring with a plurality of faceted reflective surfaces (Abstract; Fig. 1).
15		
16		<u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Fig. 4, 6, 8, and 9).
17		
18		<u>Lederrey</u> teaches a jewelry article having an annular portion and having at least two external surfaces that are continuous and of width sufficient to provide each external surface with a polished facet. (col. 2, lines 54-60; Figs. 1-4).
19		
20		
21		<u>Rein</u> teaches a finger ring having both curved and flat surfaces and having aesthetic appearance and shape. (col. 7, lines 17-33; col. 2, lines 25-26; Figs. 12-15).
22		
23		
24		<u>West</u> has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape. Further, <u>West</u>
25		
26		
27		

1		has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		
4		
5		
6		
7		<u>McKinnon</u> testified that providing the annular band with any desired surface profile or shape was well known in the prior art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through p. 164 line 3).
8		
9		
10		<u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry....” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
11		
12		
13		
14		
15		<u>Stanley</u> testified that any desired shape or surface could be formed (p. 26 lines 1-4; p. 29 lines 2-11; p. 33 lines 2-6).
16	with a facet having a polished grey mirror finish and	The ‘791 patent teaches making a silver jewelry article where the metal is “polish[ed] as bright as possible, preferably to a mirror finish.” (Col. 1, lines 45-46).
17		
18		<u>Fujimora</u> teaches polishing to a mirror finish a jewelry article made of tungsten carbide. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).
19		
20		
21		<u>Maruyama</u> teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. <u>Maruyama</u> teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics. (English translation of Abstract; table 1 on page 254).
22		
23		
24		
25		
26		<u>Lederrey</u> teaches a polished facet of tungsten carbide. <u>Lederrey</u> states, “[t]he color of the material consisting of
27		

1		sintered tungsten carbide is darker than that of steel, thus giving the watch case according to the invention an original ornamental appearance.” (col. 2, lines 54-60; col. 5, lines 53-57).
2		
3		
4		<u>West</u> has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. The watch and watch bracelet made by Rado has a polished surface.
5		Further, <u>West</u> has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art (West deposition, p. 45 line 16 – p. 46 line 21; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24).
6		
7		
8		
9		
10		
11		<u>McKinnon</u> testified that polishing a facet to provide a grey mirror finish was well known in the prior art (p.25 line 19 through p. 28 line 3).
12		
13		
14		<u>Iler</u> teaches a facet having a polished mirror finish (col. 8, line 6, lines 17-32 and lines 58-59; col. 10, lines 60-66; col. 11, lines 35-37 and lines 53-59). <u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry....” (col. 5, line 64 through col. 6, line 1). Also, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
15		
16		
17		
18		
19		
20		
21		<u>Stanley</u> ring had a facet having a polished grey mirror finish (p. 28 line 23 through p. 29 line 1; p. 31 lines 18-21; p.32 line 20 through p. 33 line 9).
22		
23	with the hard material being long wearing and virtually indestructible during normal use of the finger ring so that each facet retains its mirror finish,	<u>Fujimora</u> teaches that the hard material has hardness in excess of Hv 1,000 and is essentially mar-proof. (col. 1, lines 4-17, 20-27; col. 2, lines 22-45).
24		
25		<u>Nippon Tungsten</u> teaches that the sintered alloy has a hardness of 1290 Hv, deflective strength of 220-250 kg/mm ² , good corrosion resistance to synthetic sweat, exhibited no cracking after brazing with Inconel. (English translation of Abstract).
26		
27		

Maruyama teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. Maruyama teaches that the hard alloy has mechanical strength, corrosion resistance, and polishing brightness characteristics, and is suitable for jewelry articles. (English translation of Abstract; table 1 on page 254).

Lederrey states, “[t]he hardness of the material obtained by sintering a tungsten carbide powder is about 9 in the Moh’s scale. Said material is thus harder than topaz, which is about 8 in the Moh’s scale....A piece made of sintered tungsten carbide will therefore not be scratched by the usual materials....The improved watch case according to the invention has thus the advantage to keep its original appearance during a period which is practically non-limited, even if it is carried under the most extensive conditions. Its polished outer surfaces will always show the same brightness and it will never be damaged by scratches.” (col. 5, lines 33-49).

Rein states, “it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).

West has admitted that the compositions/formula of tungsten carbide material and the method of making tungsten carbide blanks used for West’s tungsten carbide ring were known in the prior art and were not invented by him. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West’s tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon (McKinnon deposition, p. 25 line 19 through p. 28 line 1; p. 35 line 13 through p. 36 line 6; p. 47

1		line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9; p. 163 line 22 through p. 164 line 3).
2		
3		
4		
5		<u>Iler</u> teaches that the hard material is long wearing and virtually indestructible during normal use of the jewelry ring (col. 6, lines 25-28 and lines 41-45; col. 1, lines 49-58).
6		
7		<u>Stanley</u> ring is inherently hard enough to be long wearing and virtually indestructible during normal use of the ring because it was made of 85 weight percent or more tungsten carbide (<i>see also</i> , p. 71 lines 6-7).
8		
9		
10	wherein each facet extends	In the '040 patent (Fig. 1) and '692 patent (Fig. 3), the facet
11	concentrically and	is concentric, continuous and without variation in width.
12	continuously around the	<u>Hawke</u> teaches that each facet extends concentrically and
13	circumference of the ring	continuously around the circumference of the finger ring
14	without variations in its width,	without variations in its width. (Figs. 1 and 3).
15	and	
16		<u>Brogan</u> teaches that each facet extends concentrically and
17		continuously around the circumference of the ring without
18		variations in its width. (Figs. 3-6).
19		<u>Lederrey</u> teaches that a facet extends concentrically and
20		continuously around the circumference of the annular
21		portion of the jewelry article without variations in its width.
22		(col. 2, lines 54-60; Figs. 1-3).
23		<u>Rein</u> teaches a finger ring having both curved and flat
24		surfaces and having aesthetic appearance and shape. <u>Rein</u>
25		teaches that a variety of metallic decorative constructions
26		are possible. (col. 7, lines 17-33; col. 2, lines 25-26; Figs. 12-15).
27		<u>West</u> has admitted that, prior to his conception of a tungsten carbide ring, carbide companies had been manufacturing tungsten carbide blanks of any desired shape. Further, <u>West</u> has admitted that a grind shop, not West himself, was the one who turned the tungsten carbide blanks into rings as grinding a tungsten carbide blank was well known in the prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 –

1		p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		<u>McKinnon</u> testified that providing the annular ring with any
4		desired surface profile or shape was well known in the prior
5		art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through
6		p. 164 line 3).
7		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
8		size, shapes, combinations of materials used and areas of
9		use are so broad that it is impossible and should be
10		unnecessary [<i>sic</i>] to list all possible types of jewelry....”
11		(col. 5, line 64 through col. 6, line 1). Also, <u>Iler</u> states that
12		“[m]ethods for fabricating such item of jewelry as well as
13		methods for cutting, shaping and polishing the dense
14		compositions will be apparent to those skilled in the art”
15		(col. 6, lines 19-21).
16		<u>Stanley</u> testified that any desired shape or surface could be
17		formed (p. 26 lines 1-4; p. 29 lines 2-11; p. 33 lines 2-6).
18	wherein the body includes a	<u>The ‘259 patent</u> (Figs. 1, 2) teaches cavities of a
19	cavity of a predetermined size	predetermined size and shape arranged in a row, albeit not
20	and shape that is a continuous	as a continuous slot, around the ring.
21	slot which extends entirely	<u>Hawke</u> teaches forming finger rings having inserts/inlays of
22	around the annular body and	a precious metal that provides a substantially different
23		visual effect to the finger ring. <u>Hawke</u> teaches providing a
24		finger ring with a recessed middle portion circumferentially
25		formed in an outer surface of the ring. (pp. 1-2; Figs. 1 and
26		3).
27		<u>Brogan</u> teaches a method of forming a groove in a ring by
		machining in order to hold gems, form facets, or hold
		precious metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).
		<u>Bager</u> teaches “finishing the surfaces of said blank
		according to taste and turning into the periphery thereof an
		external annular groove having upstanding side walls;
		providing a strip of metal of the same or another variety
		having a section which will adapt it to fit the said groove
		when conformed thereto...curving the ornamenting strip
		into a ring surrounding the body portion in the groove
		thereof”. (col. 1, lines 14-24; Fig. 4, 6, 8, and 9).
		<u>Lederrey</u> teaches a half cylindrical recess, an annular central

1 hole, blind holes, and two recesses, formed in the jewelry
2 article. They are configured to receive components such as
3 a winding and hand setting member, a watch movement, a
4 bar, and a wrist band. (col. 3, lines 3-5, 43-45; col. 5, lines
5 8-13; Figs. 1-4 and 7).

6 Rein teaches providing a finger ring with a recess on its
7 outer surface within which precious stones, plastics,
8 ceramics, glass, amber, or other material can be inserted.
9 (col. 1, lines 32-36; col. 7, lines 36-40; col. 10, lines 33-35;
10 col. 11, lines 53-59; Figs. 5, 12-15).

11 West has admitted that, prior to his conception of a tungsten
12 carbide ring, carbide companies had been manufacturing
13 tungsten carbide blanks of any desired shape in various
14 dimensions. Further, West has admitted that a grind shop,
15 not West himself, was the one who turned the tungsten
16 carbide blanks into rings as grinding a tungsten carbide
17 blank was well known in the prior art. (West deposition, p.
18 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57
19 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p.
20 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p.
21 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p.
22 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 –
23 8).

24 McKinnon testified that providing the annular body with any
25 desired surface profile or shape was well known in the prior
26 art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through
27 p. 164 line 3).

Iler states that “[i]tems of jewelry are so well known and the
size, shapes, combinations of materials used and areas of
use are so broad that it is impossible and should be
unnecessary [*sic*] to list all possible types of jewelry....The
compositions of this invention can be used alone or in
combination with any structural materials or materials of
apparel including metal....Combinations can be made for
example by brazing, soldering, gluing, cementing, inseting,
pegging, and sewing...” (col. 5, line 64 through col. 6, line
1). Further, Iler states that “[m]ethods for fabricating such
item of jewelry as well as methods for cutting, shaping and
polishing the dense compositions will be apparent to those
skilled in the art” (col. 6, lines 19-21).

Stanley testified that any desired shape or surface could be

1		formed (p. 26 lines 1-4; p. 29 lines 2-11; p. 33 lines 2-6).
2	is configured to receive an	<u>The '259 patent</u> teaches decorations with a different visual
3	insert of a decoration	effect, such as "sharp degree of color contrast." (Col. 2, line
4	component that provides a	7.)
5	substantially different visual	<u>Hawke</u> teaches forming finger rings having inserts/inlays of
6	effect to the ring, with the slot	a precious metal that provides a substantially different
7	positioned between and	visual effect to the finger ring. <u>Hawke</u> teaches providing the
8	adjacent to the facets, and	insert within a recessed middle portion circumferentially
9		formed in an outer surface of the ring and positioned
10		between and adjacent to the facets. (pp. 1-2; Figs. 1 and 3).
11		<u>Brogan</u> teaches a method of forming a groove in a ring by
12		machining in order to hold gems, form facets, or hold
13		precious metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).
14		<u>Bager</u> teaches "finishing the surfaces of said blank according
15		to taste and turning into the periphery thereof an external
16		annular groove having upstanding side walls; providing a
17		strip of metal of the same or another variety having a section
18		which will adapt it to fit the said groove when conformed
19		thereto...curving the ornamenting strip into a ring
20		surrounding the body portion in the groove thereof". (col. 1,
21		lines 14-24; Fig. 4, 6, 8, and 9).
22		<u>Lederrey</u> teaches a half cylindrical recess, an annular central
23		hole, blind holes, and two recesses, formed in the jewelry
24		article. They are configured to receive components such as a
25		winding and hand setting member, a watch movement, a bar,
26		and a wrist band. (col. 3, lines 3-5, 43-45; col. 5, lines 8-13;
27		Figs. 1-4 and 7).
		<u>Rein</u> teaches providing a finger ring with a recess on its
		outer surface within which precious stones, plastics,
		ceramics, glass, amber, or other material can be inserted.
		(col. 1, lines 32-36; col. 7, lines 36-40; col. 10, lines 33-35;
		col. 11, lines 53-59; Figs. 5, 12-15).
		<u>West</u> has admitted that, prior to his conception of a tungsten
		carbide ring, carbide companies had been manufacturing
		tungsten carbide blanks of any desired shape in various
		dimensions. Further, <u>West</u> has admitted that a grind shop,
		not West himself, was the one who turned the tungsten
		carbide blanks into rings as grinding a tungsten carbide
		blank was well known in the prior art. (West deposition, p.
		45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57

1		lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).
2		
3		
4		
5		<u>McKinnon</u> testified that providing the annular body with any desired surface profile or shape was well known in the prior art (p. 35 line 13 through p. 36 line 6; p. 163 line 22 through p. 164 line 3).
6		
7		
8		<u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry....The compositions of this invention can be used alone or in combination with any structural materials or materials of apparel including metal....Combinations can be made for example by brazing, soldering, gluing, cementing, inseting, pegging, and sewing...” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
9		
10		
11		
12		
13		
14		
15		<u>Stanley</u> testified that any desired shape or surface could be formed (p. 26 lines 1-4; p. 29 lines 2-11; p. 33 lines 2-6).
16		
17	the decoration component comprising a precious metal	The ‘259 patent teaches that “inserts may be of white green and/or red gold. Other noble metals could be used, e.g. platinum, silver, etc.” (Col. 2, lines 53-56.)
18		
19		<u>Hawke</u> teaches forming finger rings having inserts/inlays of a precious metal. (pp. 1-2; Figs. 1 and 3).
20		
21		<u>Brogan</u> teaches a method of forming a groove in a ring by machining in order to hold gems, form facets, or hold precious metals. (col. 1, lines 13-17 and 34-40; Figs. 3-6).
22		
23		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 7, lines 17-33; col. 2, lines 25-26; Figs. 12-15).
24		
25		<u>West</u> has admitted that joining two different metals together was well known in the prior art. <u>West</u> has testified that what is unique and new about his method of inlaying another metal into a tungsten carbide is melting the metal in the
26		
27		

1		tungsten carbide substrate in a vacuum. Such element, however, is not required in this claim. (p. 110 line 12 – p. 115 line p. 4; p. 118 lines 9-13).
2		
3		<u>Iler</u> states that “[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [<i>sic</i>] to list all possible types of jewelry....The compositions of this invention can be used alone or in combination with any structural materials or materials of apparel including metal....Combinations can be made for example by brazing, soldering, gluing, cementing, inseting, pegging, and sewing...” (col. 5, line 64 through col. 6, line 1). Further, <u>Iler</u> states that “[m]ethods for fabricating such item of jewelry as well as methods for cutting, shaping and polishing the dense compositions will be apparent to those skilled in the art” (col. 6, lines 19-21).
4		
5		
6		
7		
8		
9		
10		
11	that is disposed in and fills the slot, which slot extends into the hard material, and	The ‘259 patent teaches inserts that necessarily fill the slots because they are of exactly the same shape as the slots. (Col. 2, lines 56-59.)
12		
13		<u>Hawke</u> teaches providing the insert within the recessed middle portion circumferentially formed in an outer surface of the ring. <u>Hawke</u> teaches that the insert will be a tight fit on the recessed middle portion. (pp. 1-3; Figs. 1 and 3).
14		
15		
16		<u>Bager</u> teaches “finishing the surfaces of said blank according to taste and turning into the periphery thereof an external annular groove having upstanding side walls; providing a strip of metal of the same or another variety having a section which will adapt it to fit the said groove when conformed thereto...curving the ornamenting strip into a ring surrounding the body portion in the groove thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).
17		
18		
19		
20		
21		<u>Rein</u> teaches providing a finger ring with a recess on its outer surface within which precious stones, plastics, ceramics, glass, amber, or other material can be inserted.
22		<u>Rein</u> teaches that a variety of metallic decorative constructions are possible. (col. 1, lines 32-36; col. 7, lines 17-40; col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-15).
23		
24		
25		
26		<u>West</u> has admitted that joining two different metals together was well known in the prior art. <u>West</u> has testified that what is unique and new about his method of inlaying another
27		

1		metal into a tungsten carbide is melting the metal in the
2		tungsten carbide substrate in a vacuum. Such element,
3		however, is not required in this claim. <u>West</u> has admitted
4		that, prior to his conception of a tungsten carbide ring,
5		carbide companies had been manufacturing tungsten carbide
6		blanks of any desired shape in various dimensions. Further,
7		<u>West</u> has admitted that a grind shop, not West himself, was
8		the one who turned the tungsten carbide blanks into rings as
9		grinding a tungsten carbide blank was well known in the
10		prior art. (West deposition, p. 45 line 16 – p. 46 line 21; p.
11		54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 –
12		24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 –
13		p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p.
14		96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p.
15		105 line 22; p. 108 lines 3 – 8; p. 110 line 12 – p. 115 line p.
16		4; p. 118 lines 9-13).
17		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
18		size, shapes, combinations of materials used and areas of
19		use are so broad that it is impossible and should be
20		unnecessary [<i>sic</i>] to list all possible types of jewelry....The
21		compositions of this invention can be used alone or in
22		combination with any structural materials or materials of
23		apparel including metal....Combinations can be made for
24		example by brazing, soldering, gluing, cementing, inseting,
25		pegging, and sewing...” (col. 5, line 64 through col. 6, line
26		1). Further, <u>Iler</u> states that “[m]ethods for fabricating such
27		item of jewelry as well as methods for cutting, shaping and
		polishing the dense compositions will be apparent to those
		skilled in the art” (col. 6, lines 19-21).
	the decoration component is	<u>Hawke</u> teaches providing the insert within the recessed
	mechanically fit with the hard	middle portion circumferentially formed in an outer surface
	material to hold the precious	of the ring. <u>Hawke</u> teaches that the insert will be a tight fit
	metal therein and	on the recessed middle portion. (pp. 1-3; Figs. 1 and 3).
		<u>Bager</u> teaches “finishing the surfaces of said blank
		according to taste and turning into the periphery thereof an
		external annular groove having upstanding side walls;
		providing a strip of metal of the same or another variety
		having a section which will adapt it to fit the said groove
		when conformed thereto...curving the ornamenting strip
		into a ring surrounding the body portion in the groove
		thereof”. (col. 1, lines 14-24; Figs. 6, 8, and 9).
		<u>Rein</u> teaches providing a finger ring with a recess on its
		outer surface within which precious stones, plastics,

1		ceramics, glass, amber, or other material can be inserted.
2		<u>Rein</u> teaches that a variety of metallic decorative
3		constructions are possible. (col. 1, lines 32-36; col. 7, lines
4		17-40; col. 10, lines 33-35; col. 11, lines 53-59; Figs. 5, 12-
5		15).
6		<u>West</u> has admitted that joining two different metals together
7		was well known in the prior art. <u>West</u> has testified that what
8		is unique and new about his method of inlaying another
9		metal into a tungsten carbide is melting the metal in the
10		tungsten carbide substrate in a vacuum. Such element,
11		however, is not required in this claim. (p. 110 line 12 – p.
12		115 line p. 4; p. 118 lines 9-13).
13		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
14		size, shapes, combinations of materials used and areas of
15		use are so broad that it is impossible and should be
16		unnecessary [<i>sic</i>] to list all possible types of jewelry....The
17		compositions of this invention can be used alone or in
18		combination with any structural materials or materials of
19		apparel including metal....Combinations can be made for
20		example by brazing, soldering, gluing, cementing, inseting,
21		pegging, and sewing...” (col. 5, line 64 through col. 6, line
22		1). Further, <u>Iler</u> states that “[m]ethods for fabricating such
23		item of jewelry as well as methods for cutting, shaping and
24		polishing the dense compositions will be apparent to those
25		skilled in the art” (col. 6, lines 19-21).
26	wherein an outer surface of the	The ‘259 patent teaches inserts that necessarily form a
27	precious metal forms a smooth	smooth transition with the outer surface because the inserts
	transition with each facet.	are “openings are formed to a depth equal to the thickness of
		said inserts.” (Col. 4, lines 9-10.)
		<u>Hawke</u> teaches that an outer surface of the precious metal
		insert forms smooth transition with each facet. (Fig. 3).
		<u>Bager</u> teaches that an outer surface of the ornamenting strip
		forms a smooth transition with each facet. (Fig. 9).
		<u>Rein</u> teaches that a variety of metallic decorative
		constructions are possible. (col. 7, lines 17-33; Figs. 12 and
		13).
		<u>Iler</u> states that “[i]tems of jewelry are so well known and the
		size, shapes, combinations of materials used and areas of
		use are so broad that it is impossible and should be
		unnecessary [<i>sic</i>] to list all possible types of jewelry....The

1		compositions of this invention can be used alone or in
2		combination with any structural materials or materials of
3		apparel including metal....Combinations can be made for
4		example by brazing, soldering, gluing, cementing, inseting,
5		pegging, and sewing...” (col. 5, line 64 through col. 6, line
6		1). Further, <u>Iler</u> states that “[m]ethods for fabricating such
7		item of jewelry as well as methods for cutting, shaping and
8		polishing the dense compositions will be apparent to those
9		skilled in the art” (col. 6, lines 19-21).
10		
11	Claim 5	
12	The finger ring of claim 1,	<u>Lederrey</u> states, “[t]he hardness of the material obtained by
13	wherein the annular body	sintering a tungsten carbide powder is about 9 in the Moh’s
14	includes design details that are	scale. Said material is thus harder than topaz, which is
15	maintained in their original	about 8 in the Moh’s scale....A piece made of sintered
16	configuration indefinitely.	tungsten carbide will therefore not be scratched by the usual
17		materials....The improved watch case according to the
18		invention has thus the advantage to keep its original
19		appearance during a period which is practically non-limited,
20		even if it is carried under the most extensive conditions. Its
21		polished outer surfaces will always show the same
22		brightness and it will never be damaged by scratches.” (col.
23		5, lines 21-26 and 33-49).
24		<u>Rein</u> teaches that a variety of metallic decorative
25		constructions are possible. <u>Rein</u> states, “it is advantageous
26		to make both the contacts and the surrounding ring elements
27		of material which is as hard and abrasion-resistant as
		possible, for instance steel, tungsten carbide or non-ferrous
		metal alloys, since less wear thus takes place upon use.”
		(col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).
		<u>West</u> has admitted that the compositions/formula of
		tungsten carbide material and the method of making
		tungsten carbide blanks used for West’s tungsten carbide
		ring were known in the prior art and were not invented by
		him. <u>West</u> has admitted that, prior to his conception of a
		tungsten carbide ring, carbide companies had been
		manufacturing tungsten carbide blanks of any desired shape
		in various dimensions. Further, <u>West</u> has admitted that a
		grind shop, not West himself, was the one who turned the
		tungsten carbide blanks into rings as grinding a tungsten
		carbide blank was well known in the prior art. (West
		deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55
		line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 –
		p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p.

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15
- 16
- 17
- 18
- 19
- 20
- 21
- 22
- 23
- 24
- 25
- 26
- 27

consists essentially of sintered tungsten carbide.

2, lines 22-45).

Nippon Tungsten teaches that the hard material consists essentially of sintered tungsten carbide. (English translation of Abstract).

Maruyama teaches that a hard alloy containing tungsten carbide and a binding metal is prepared by a powder metallurgical method, wherein the hard alloy contains tungsten carbide as much as 91 weight percent. (English translation of Abstract; table 1 on page 254).

Lederrey teaches providing a mixture of a powder of tungsten carbide and a powder of a bonding metal. (col. 1, lines 65-69). Lederrey states that the “mixture is then submitted to a preliminary sintering so as to form a solid block which can however still be machined easily for instance by means of a diamond tool. Pieces having a shape similar to that of the workpieces which are to be manufactured are then cut from said block and introduced into a furnace to carry out the final sintering thereof.” (col. 1, lines 9-42; col. 1, line 65 – col. 2, line 8; col. 2, lines 25-29, 49-51, 55-60, and 67-69; col. 3, lines 3-6, 17-29, 37-40; col. 3, line 70 – col. 4, line 2; col. 5, lines 4-26, 33-57, and 63-67; Figs. 1 and 7).

Rein states, “it is advantageous to make both the contacts and the surrounding ring elements of material which is as hard and abrasion-resistant as possible, for instance steel, tungsten carbide or non-ferrous metal alloys, since less wear thus takes place upon use.” (col. 7, lines 17-40; col. 2, lines 25-26; Figs. 12-14).

West has admitted that the compositions/formula of tungsten carbide material, the method of making tungsten carbide blanks, and sintering process, used for West’s tungsten carbide ring were known in the prior art and were not invented by him. West has acknowledged a tungsten-carbide based watch and watch bracelet made by Rado as prior art, based upon which he developed his tungsten carbide ring. (West deposition, p. 45 line 16 – p. 46 line 21; p. 54 line 21 – p. 55 line 12; p. 57 lines 3 – 6; p. 58 lines 18 – 24; p. 59 line 9 – p. 61 line 3; p. 74 lines 4-10; p. 88 line 9 – p. 89 line 14; p. 90 lines 13 – p. 94 line 23; p. 95 line 23 – p. 96 line 21; p. 97 line 20 – p. 100 line 24; p. 104 line 10 – p. 105 line 22; p. 108 lines 3 – 8).

McKinnon testified that the compositions/formula of tungsten carbide material used for West's tungsten carbide ring was known in the prior art and had been developed and chosen by McKinnon. Also, McKinnon testified that sintering tungsten carbide was well known in the prior art (McKinnon deposition, p. 17 line 20 through p. 18 line 20; p. 25 line 19 through p. 28 line 1; p. 29 line 8 through p. 31 line 14; p. 35 line 13 through p. 36 line 6; p. 47 line 8 through p. 48 line 2; p. 50 lines 10-16; p. 60 lines 14-18; p. 61 lines 12-14; p. 63 line 22 through p. 64 line 1; p. 64 lines 14-25; p. 65 lines 3-25; Exhs. 400, 401, 402, 403, and 405; p. 68 line 13 through p. 69 line 1; p. 73 lines 1-7; p. 112 lines 12-25; p. 133 lines 18-25; p. 153 line 24 through p. 154 line 9).

Iler teaches that the hard material contains 70 volume percent of sintered tungsten carbide (col. 2, lines 24-27; col. 9, lines 56-58; col. 8, lines 67-70; col. 1, lines 48-55; col. 6, lines 25-28 and lines 41-45; col. 5, lines 49-51; col. 10, lines 37-46). Iler further teaches that suitable carbides such as tungsten carbide can be prepared by means well-known to the art or they can be obtained commercially (col. 4, lines 24-26), and states that "[i]tems of jewelry are so well known and the size, shapes, combinations of materials used and areas of use are so broad that it is impossible and should be unnecessary [*sic*] to list all possible types of jewelry" (col. 5, lines 64-67). Also, Iler acknowledges scratch resistant watch cases of cobalt-bonded tungsten carbide compositions as prior art (col. 7, lines 46-48).

Stanley ring is a finger ring, wherein the hard material consisted essentially of sintered tungsten carbide (p. 32 lines 7-12; p. 33 lines 16-18; p. 52 lines 14-22; p. 25 line 22 through p. 26 line 4).

V. DOCUMENT PRODUCTION UNDER LOCAL PATENT RULE 3-4

With respect to the documents required under Patent L.R. 3-4(a), other than the

1 documents already produced or made available¹ to Plaintiff, Crown Ring has no additional
2 documents to produce at this time.

3 Regarding the prior art identified herein per Patent L.R. 3-3(a), copies of the prior art
4 reference Nos. 1 through 8 were previously produced in connection with Crown Ring's
5 original Preliminary Invalidity Contentions served on September 25, 2007. Each item of the
6 prior art reference Nos. 9 through 20 were cited in the prosecution of the Patents in suit and
7 listed under "References Cited" on the title pages of the Patents in suit. The reference Nos. 21
8 through 23 are based on deposition transcripts and exhibits attached thereto, copies of which
9 Plaintiff already has.

10
11
12 Dated: November 17, 2008

13 /s/ R. Joseph Trojan

14 R. Joseph Trojan

15 TROJAN LAW OFFICES

16 Attorney for Defendant, Crown Ring, Inc.
17
18
19
20
21
22
23
24

25 ¹ Crown Ring proposed to produce all of its ring samples upon Plaintiff's payment of the costs
26 of them, since there are so many different models and the ring samples are costly. Producing
27 all of the different models will cost Crown Ring thousands of dollars or more. However,
Plaintiff has never responded to Crown Ring's proposal and never requested such ring
samples.